TECHNICAL MANUAL

AF TECHNICAL MANUAL ACQUISITION PROCEDURES

Prepared By: Automated Technical Order System (ATOS)

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LIST OF EFFECTIVE PAGES

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CHAPTER 1

INTRODUCTION AND POLICY

1-1 PURPOSE.

This Technical Order (TO) provides the TO Manager with guidance and direction for managing acquisition of TOs and updates, to support initial acquisition and modification of system and equipment hardware and software. This TO is to be used in conjunction with the publications listed in table 1-1 (which includes the titles of all publications referenced in this TO).

1-1.1 Terms and Acronyms. Terms and acronyms used in this TO are defined in the Glossary (appendix A). Addresses for organizations and activities with whom the TO Manager may require direct communication are listed in appendix D.

1-1.2 Supplements and Changes. This TO may be supplemented according to TO 00-5-1. Copies of all supplements will be sent to USAF/ILMM, 1030 Air Force Pentagon, Washington DC 20330-1030, and MSG/ILJ, 4375 Chidlaw Rd, Ste 6, WPAFB OH 45433-5006; and OC-ALC/TILDT, 3001 Staff Dr Ste 1AB100, Tinker AFB OK 73145-3042. Suggested changes to this TO should be submitted on AFTO Forms 22, Technical Order Improvement Report And Reply, according to TO 00-5-1.

1-2 CONCEPT.

The TO System and its operation are covered by this TO and TOs 00-5-1, 00-5-2, 00-5-15, and 00-5-18.

1-2.1 TO acquisition includes the development and/or acquisition of technical data and TOs to operate and maintain centrally-acquired and managed military systems and commodities. TOs for individual systems and commodities are acquired by assigned TO Managers (see chapter 2). Flight Manual Managers (FMMs) manage the acquisition of Flight Manual Program (FMP – AFI 11-215) publications under the guidance of the TO Manager.

1-2.2 TO acquisition (figure 1-1) involves the TO Manager, using command, support agencies and the contractor working together to deliver verified formal TOs prior to or concurrently with hardware delivery to the operational unit (AFPD 21-3). Acquisition and maintenance of TOs must be effectively managed through the life cycle of the military system or commodity that the TOs support in accordance with the Integrated Weapon System Management (IWSM) concept.

1-3 POLICY.

TOs to support new acquisition or modification programs for military systems or commodities are acquired on a schedule formally imposed by the contract to meet the requirements for development, review, verification, and delivery of formal TOs. Any manuals developed for the government (at government expense) must be developed to a performance or government-approved non-government specification.

1-3.1 Delivery Requirements. Delivery of PTOs shall be prior to or concurrent with delivery of the hardware for development testing and/or operational need dates. Formal organizational level (on-equipment) TOs and preliminary intermediate level (off-equipment) TOs will be delivered prior to or concurrently with the delivery of the first production configured system or commodity to the first operational unit . Intermediate-level manuals must be formalized by the initial operational capability (IOC) date.

1-3.1.1 For the two-level maintenance concept, field level TOs meeting the definitions of "on-equipment" and "off-equipment" must meet the delivery requirements of Organizational and Intermediate-level manuals, respectively. Preliminary depot level TOs will be delivered prior to depot prototype overhaul and must be verified and formalized prior to depot activation.

1-3.1.2 If TOs cannot be delivered according to this policy, the TO Manager must revise verification schedules, update the TO Management Plan (TOMP), and recommend interim support for the using command (use of verified or partly verified Preliminary TOs (PTOs), Interim Contractor Support (ICS, AFI 63-111), etc.) until the manuals are delivered (see paragraph 1-3.4). Any such actions must be coordinated with and approved by the appropriate Single Manager (SM) and the using command.

1-3.2 Acquisition Requirements. TOs will be acquired according to DOD 5010.12-M, on a separate Contract Line Item Number (CLIN), using a contract exhibit consisting of a DD Form 1423, Contract Data Requirements List (CDRL), with a program-specific (tailored) TM-86-01, Technical Manual Contract Requirements (TMCR) document. The TMCR is managed by MSG/ILJ in coordination with other acquisition agencies. A copy is available through the TO System Information

Page at WWW address http://www.pdsm.wpafb.af.mil/toprac/to-syste.htm.

1-3.2.1 Digital (Electronic) TOs. Current DoD policy requires "...preference be given to delivery (of all data, including TOs) in machine-readable form rather than paper." RFPs will require the contractor to propose how their technical information system for logistic support can be integrated with the government's, using Continuous Acquisition and Life-Cycle Support (CALS) standards (DOD 5000.2-R). MSG/ILJ may be contacted for assistance prior to developing contractual documents. This will ensure standardization of digital system hardware and software to the maximum extent possible within the Air Force and DoD. See figure 1-2, Digital TO Format Acquisition Matrix, to determine which digital formats to place on contract.

1-3.2.2 Contracts should provide an opportunity for government review and approval of revisions, changes, and supplements to program TOs.

1-3.3 General Policies. Maximum use will be made of existing data. Available manuals from other government departments or agencies will be reviewed to determine adequacy and application to particular programs. TOs which do not conform to existing exempted or military performance (MIL-PRF) specifications will not be acquired or prepared without the prior approval of MSG/ILJ (TO 00-5-1). Approval is also required for use of Non-Government (commercial) Standards (NGS) in lieu of MIL-PRF specifications for TO development.

1-3.3.1 Commercial Off-The-Shelf (COTS) Manuals. Existing commercial operating instructions, parts breakdown handbooks, and repair manuals will be acquired instead of developing new TOs if no degradation in system operation, safety, support or reliability will result. This will save money and time for the TO program. COTS manuals will be reviewed and evaluated by the TO Manager, using command and technical content manager (TCM) according to MIL-HDBK-1221.

1-3.3.1.1 Commercial aircraft maintenance and operations (flight) manuals (FMP) proposed for use by Air Force personnel must be reviewed by the TCM and FMM against both MIL-HDBK-1221 and MIL-PRF-7700 requirements.

CAUTION

Air Force and commercial roles and responsibilities for flight crews and ground crews are different. Procedure changes to commercial maintenance manuals could also affect military flight crew manuals. Reviewers must consider this possibility and if it exists, take action to include the appropriate changes in both flight crew and maintenance manuals.

1-3.3.1.2 Approved COTS manuals will be adopted for Air Force use, assigned a TO number and managed within the TO system unless a waiver is approved in accordance with paragraph 1-3.3.4. Manuals which are initially disapproved will be supplemented if possible to make them acceptable; supplements will be written according to the parent manual's style and format. When supplementing is not adequate, new TOs will be developed to MIL-PRF or approved commercial specifications. Careful consideration of future support costs, incorporation of commercial updates, and ease of use will determine whether military or commercial specifications should be used. Data developed for the system or equipment contractor's own internal use, if later purchased by the government, will be treated the same as COTS data.

1-3.3.2 Proprietary and Copyrighted Data. When a program acquires proprietary or copyrighted data, the Air Force must receive at least limited rights allowing reproduction and distribution of the data for government purposes, in accordance with Defense Federal Acquisition Regulations Supplement (DFARS) clauses (see chapter 4). Unlimited rights are recommended whenever possible.

1-3.3.3 Integrating TOs. TOs for the operation and maintenance of end items which are composed of interconnected configuration items will be maintained under the TO system. The agency or contractor who developed the end item will normally develop the integrated operating and maintenance instructions.

1-3.3.4 Numbering COTS Manuals. The decision to number, manage, and use commercial manuals for mixed-support programs (partly organic, partly contractor support) in or outside the TO system will be made jointly by the TO Manager, user and appropriate TCM. Generally, manuals used for organic (Air Force) operations or maintenance will be included in the TO System unless a waiver is approved by HQ USAF/ ILMM. When different user organizations have different operation or maintenance support concepts, manuals will be managed in the TO System unless cost prohibitive.

1-3.3.5 Service Bulletins, Operations Manual Bulletins, FAA Airworthiness Directives, Temporary Revisions, and Like Data. SMs must ensure, through the TO Manager, that all contracts issued for procurement or sustainment of commercial or militarized commercial systems and commodities require delivery of applicable FAA, manufacturer's or vendor's technical data updates during the entire program life-cycle.

1-3.3.5.1 Use a DID (when available), or ensure the CDRL for TO delivery requires delivery of these updating publications.

1-3.3.5.2 The TCM, depot engineering or technical support activity and FMM will determine if any updates received apply to TO-numbered flight and/or maintenance manuals, and if they will be referenced by their commercial number or will have the information extracted for inclusion in supplements or other TO updates.

1-3.3.6 Exemptions. Technical manuals (TMs) and data used in full Contractor Logistics Support (CLS) programs are exempt from management within the TO system. Manuals to support local purchase items (NOT centrally-procured COTS equipment) are also exempt. The acquiring activity is responsible for acquiring, accepting, maintaining, and distributing these publications.

1-3.3.7 Hazardous Materials (HAZMAT) and Ozone Depleting Substances (ODS). Procedures in TOs must minimize the generation, use and disposal of HAZMAT and ODS according to AFPD 32-70 and associated instructions. Any use of HAZMAT or ODS must be justified by the contractor and approved by appropriate government personnel.

1-3.4 Preliminary TOs (PTOs). TOs are considered "preliminary" from the time they have a number assigned until they are formalized (AFTO Form 27 completed). PTOs must complete the contractor's quality process before delivery to the government for verification. Formatted PTOs should be used to the maximum extent possible to support Air Force Test and Evaluation (T&E). PTOs are also used for development of training plans and course syllabuses. Air Force personnel may use unverified data during system T&E or for routine maintenance performed in conjunction with the verification effort on new or modified hardware or software. Formalization occurs after the PTOs are successfully verified and all corrections are made.

1-3.4.1 Every effort shall be made to replace organizational-level PTOs with formal TOs prior to or concurrent with delivery of the first production-configured system or commodity to the first operational unit. See TO 00-5-1 for policy on use of verified PTOs in the operational environment.

1-3.4.2 Verification Status Pages (VSPs) will be included in all TOs and PTOs which contain unverified procedures (MIL-STD-38784). Non-procedural TOs (certain Methods & Procedures TOs such as this one, IPBs, WUC manuals, etc.), do not require VSPs.

1-3.5 TO Quality Assurance (QA). The contractor is responsible for providing **adequate, safe** and **accurate** TOs which **conform** to government requirements. TOs and data must be approved by the contractor's internal QA process prior to delivery for Air Force verification (this should be one of the "exit criteria" in the contractor's Integrated Master Plan (IMP–appendix E)). The government will provide necessary Government Furnished Equipment (GFE) required to enable the contractor to test TO procedures. The government will participate in the contractor's quality process through the TO Integrated Project Team (IPT – paragraph 3-3.2), and will perform verification (chapter 7) when PTOs are delivered.

1-3.6 TO Verification. Verification policy requires 100 percent "hands on" performance of all operational, maintenance, and calibration tasks contained in TOs and supplements to commercial manuals. Verification must be performed on production-configured military system and commodity items (or inert versions of explosive items) by using command personnel. Non-procedural data will be verified during IPRs or by Desk-Top Analysis. Verification may be combined with the contractor[1]s QA process under certain circumstances (chapter 7).

CAUTION

Use of unverified procedures except under controlled conditions could result in injury to personnel or damage to equipment. Unverified procedures must NOT be used in the operational environment, except during the verification process itself. (See TO 00-5-1 for waiver authority)

1-3.6.1 The program verification schedule must be developed in conjunction with the Air Force test plan, production schedules and deployment schedules to ensure the availability of hardware, software, and equipment to support the verification effort. The tentative schedule must be provided to offerors in the RFP to allow development of supportive schedules.

1-3.6.2 TO verification will make maximum use of other scheduled events, such as test and evaluation, prototyping, and maintainability demonstrations. Activities should not be duplicated. Use unscheduled events such as equipment failure to verify applicable procedures, when possible.

1-3.7 Source Data. Technical documentation produced during the hardware development or modification process should not be redeveloped for use in program TOs. The government should not pay twice for development of the same data. Source data for TOs may consist of, but is not limited to, supportability analysis data, engineering drawings, test reports, and other technical data. It is

up to the contractor to decide which source data to use. See chapter 12.

1-3.7.1 For joint-service acquisition programs, TMs should be developed in a single format usable by all services involved, rather than developing individual manuals for each service. When separate TMs are required, common source data will be used to the maximum extent possible for their development.

1-3.7.2 Acquisition agencies will acquire source data for use in the generic servicing inspection workcards for powered aerospace ground equipment (AGE) (TO 00-5-1), and for update of other TOs not managed by the TO Manager (i.e., Crash & Rescue, Static Display, EOD, etc. – see chapter 3).

1-3.8 Reading Grade Level (RGL). TOs will be written not to exceed a ninth-grade RGL (MIL-STD-38784, AF requirement). Exceptions include: FMP TOs (AFI 11-215); tabular TOs (e.g., -06 Work Unit Code Manuals, -4 Illustrated Parts Breakdown Manuals); abbreviated TOs (e.g., workcards, checklists); MIL-PRF-83495 maintenance manual sets {e.g., job guides (JG), schematic diagram (SD) and wiring diagram (WD) manuals}; and 00-25-113-series (Precious Metals) TOs.

1-3.9 Computer Program Identification Numbers (CPINs). Software program tapes and control documentation will be referenced in TOs using only the basic CPIN (TO 00-5-16). The CPIN compendium provides the version numbers and dates of programs authorized for use.

Table 1-1. List of Related Publications

Number	Title
DOD 4120.3-M	Defense Standardization Program Policies and Procedures
DoDD 5000.1	Defense Acquisition
DOD 5000.2-R	Mandatory Procedures for Major defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs
DOD 5010.12-M	Procedures for the Acquisition and Management of Technical Data **NOTE:** DOD 5010.12-M is being replaced with an AFI, currently in development. Monitor Publications Bulletins for further information.
DOD 5010.12-L	Acquisition Management Systems and Data Requirements Control List (AMSDL)
DOD 5160.62	Single Manager Responsibility for Military Explosive Ordnance Disposal Technology and Training
DOD 5200.1-R & AFI 31-401	Information Security Program Regulation & Managing the Information Security Program
DOD 5220.22-R & AFI 31-601	Industrial Security Regulation & Industrial Security Program Management
DODD 5230.24	Distribution Statements on Technical Documents
DOD 5230.25-PH	Control of Unclassified Technical Data with Military or Space Application
DODD 5330.3/AF Supplement	Defense Automated Printing Services (DAPS)
DODISS	DOD Index of Specifications and Standards
FAR/DFARS	Federal Acquisition Regulation/Defense Federal Acquisition Regulation Supplement
AFI 11-215	Flight Manuals Program (FMP)
AFI 16-101	Politico-Military and Security Assistance Management
AFI 21-105	Aerospace Equipment Structural Maintenance

Table 1-1. List of Related Publications - Continued

Number	Title
AFJI 21-301	Interservicing of Technical Manuals and Related Technology
AFI 32-3002	Interservice Responsibility for Explosive Ordnance Disposal
AFI 37-131	Freedom of Information Act Program
AFI 60-114	Management of Contractor Data
AFI 61-204	Disseminating Scientific and Technical Information
AFI 63-101	Acquisition System
AFI 63-104	The Seek Eagle Program
AFI 63-111	Contractor Support for Systems and Equipment
AFI 65-601V1	Budget Guidance and Procedures
AFI 91-301	Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program
AFI 99-101	Developmental Test and Evaluation
AFI 99-102	Operational Test and Evaluation
AFI 99-109	Test Resources Planning
AFMAN 37-139	Records Disposition Schedule
AFMAN 91-201	Explosive Safety Standards
AFMCI 21-301	Air Force Materiel Command Technical Order System Implementing Policies
AFMCI 21-302	Processing Interim Technical Orders
AFMCMAN 21-1	Air Force Materiel Command Technical Order System Procedures
AFMCPD 33-1 & AFMCI 33-103	Receiving, Distributing, and Warehousing Technical Orders (TO)
AFPD 21-3	Technical Orders
AFPD 32-70 series	Environmental Quality
TM-86-01	Technical Manual Contract Requirements (TMCR) document
TO 00-5-1	AF Technical Order System
TO 00-5-2	Technical Order Distribution System
TO 00-5-15	AF Time Compliance Technical Order System
TO 00-5-18	USAF Technical Order Numbering System
TO 00-5-19	Security Assistance Technical Order Program
TO 11N-1-1	Joint Nuclear Weapons Publication System (JNWPS)

Table 1-1. List of Related Publications - Continued

Number	Title
DAD	Defense Acquisition Deskbook, Section 3.7, Continuous Acquisition and Life-cycle Support
MIL-DTL-22202	Manual, Technical: Aircraft Cross-Servicing Guide, Preparation of
MIL-HDBK-245	Preparation of Statements of Work
MIL-HDBK-1221	Manuals, Commercial Off-The-Shelf
MIL-STD-882	System Safety Program Requirements
MIL-STD-1808	System/Subsystem/Subject Number Numbering System
MIL-STD-1840	Automated Interchange of Technical Information
MIL-STD-38784	Manuals, Technical: General Style and Format Requirements
MIL-PRF-7700	Manuals, Flight
MIL-PRF-9977	Manuals, Technical and Checklists: Munitions/Weapons Loading Procedures, Nuclear and Nonnuclear//Packages, Standard Data: Munitions Loading Procedures, Nonnuclear
MIL-PRF-38384	Manuals, Technical: Weapon Delivery and Aircrew Procedures, Nuclear and Nonnuclear
MIL-PRF-38769	Manuals, Technical: Work Unit Code
MIL-PRF-83495	Manuals, Technical: On Equipment Set, Organizational Maintenance Manuals
MIL-PRF-87158	Manuals, Technical: Aircraft Battle Damage Assessment & Repair
MIL-PRF-87929	Manuals, Technical: Operation and Maintenance Manuals in Work Package Format
DI-TMSS-80067	Contractor Furnished Aeronautical Equipment/Contractor Furnished Equipment Notices
DI-TMSS-81532	Aircraft Emergency Rescue Information Source Data
DI-SAFT-80931	Explosive Ordnance Disposal Data

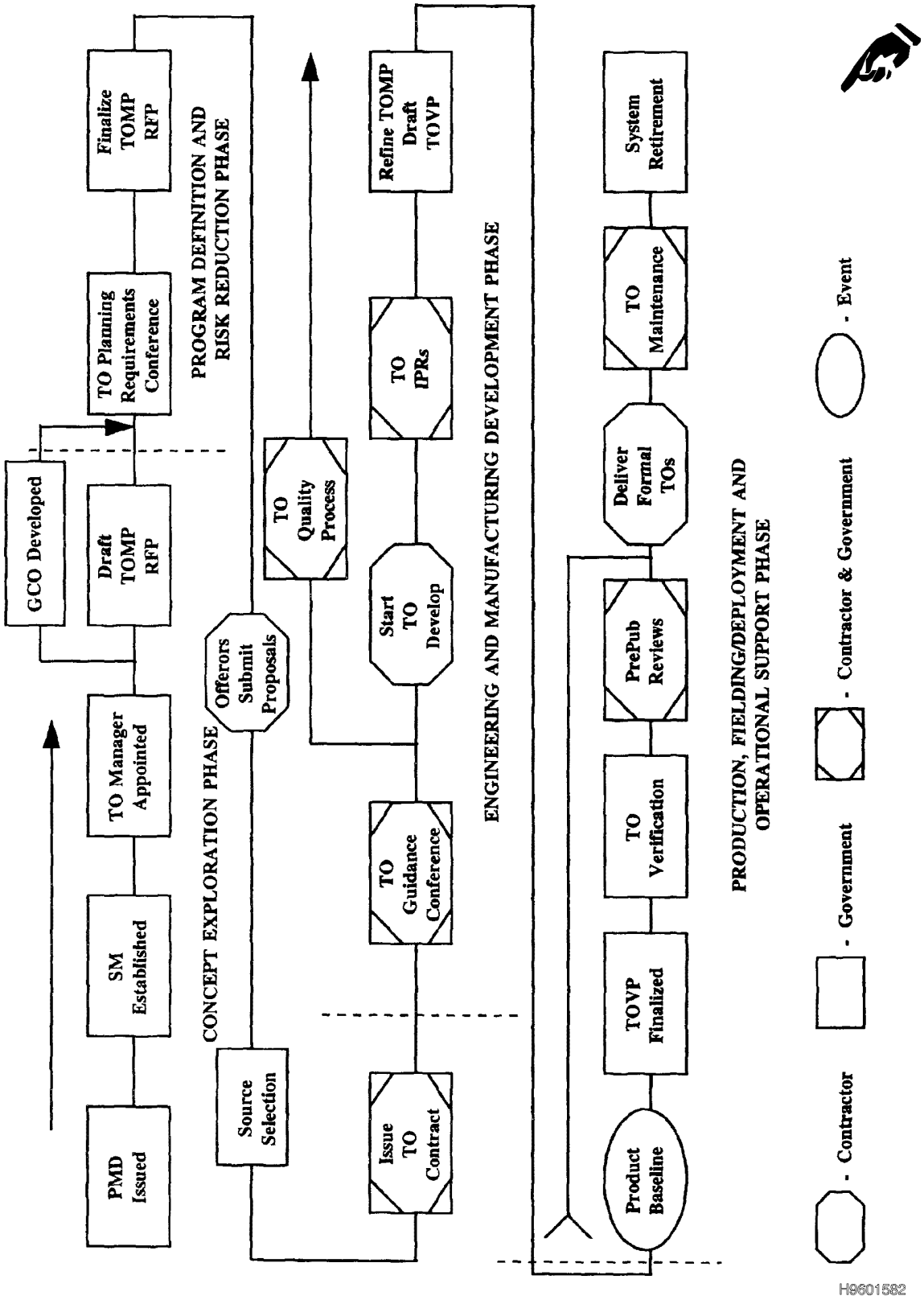

Figure 1-1. TO Acquisition Sequence Flow Chart (Sheet 1 of 4)

I PMD Issued – This is the first step in establishing an acquisition program. The PMD is based on a verified need of a Using Command.

II SM Established – A Program office to manage the acquisition is established under the control of a Single Manaager. SMs may be System Program Managers, Product Group Managers, or Materiel Group Managers depending on the system or commodity being acquired (Chapter 2 and Definitions). Most major acquisition programs are managed at an AFMC Product Center. Air Logistics Centers manage acquisition of sustainment contracts, modifications, replenishment spares, and some commodities.

III TO Manager Appointed – The SM will appoint a TO Manager, or assign TO management duties to an Integrated Product Team (IPT), early in the program. The TO Manager is responsible for developing TO budgets, Request for Proposal (RFP) inputs and TO Management/Verification Plans. (Chapter 2)

IV GCO Developed – The Government Concept of Operations (GCO) is developed by an IPT including the TO Manager, Data Manager, and Engineering Data Manager, to document and provide guidance on the program's implementation of Continuous Acquisition and Life-Cycle Support (CALS) principals for data development and delivery. Critical inputs for TO Management include compatibility with the Joint Computer-Aided Acquisition and Logistics Support (JCALS) Joint Technical Manual System (JTMS), TO digital development formats, and delivery options. The GCO is included in the RFP as Government Furnished Information (GFI). (Chapter 4)

V Draft TOMP & RFP – The TO Manager drafts TO-related RFP inputs and a TO Management Plan (TOMP) for consideration by the TO IPT. The TO IPT consists of the TO Manager, system sustainment personnel, using command representatives, training command representatives, and representatives of any special TO requirements. RFP inputs may include a Statement of Objectives (SOO) or Statement of Work (SOW), Evaluation Criteria, Instructions To Offerors (ITO), Contract Data Requirements Lists (CDRLs - DD Form 1423), and a Technical Manual Contract Requirements (TMCR) document, TM-86-01. The TOMP documents the overall TO management philosophy for the program. (Chapter 3)

VI TO Planning / Requirements Conference – This conference brings together the members of the TO IPT to review program documentation such as the PMD, Operations and Maintenance Concepts, etc., to determine TO requirements and management plans for the program. The draft RFP inputs and TOMP developed by the TO Manager are used as a starting point for the conference. (Chapter 3)

VII Finalize TOMP & RFP – The TO Manager uses the requirements developed by the planning conference to finalize the TOMP and RFP inputs. The TO data requirements are provided to the program's IPT for approval and inclusion in the RFP sent out for bid. (Chapter 3)

VIII Offerors Develop & Submit Proposals – Interested offerors develop specific cost and technical proposals for TO development and delivery based on all information and direction provided in the RFP. Proposals may include a SOW, Work Breakdown Structure (WBS), Integrated Master Plan & Schedule (IMP & IMS), recommended CDRLs, and a fully-tailored TMCR. TO program costs must be shown in a separate Contract Line Item Number (CLIN) of the proposal. (Chapter 4)

IX Source Selection – The government forms a team (or teams) to review, evaluate and compare offerors' proposals. The number of proposals received may be "down-selected" to a manageable number before going to source selection, using some objective criteria based on program needs and risk areas. (Chapters 4 & 5)

X Issue TO Contract – After source selection, the government will negotiate any areas of dispute with the winning offeror, and a contract will be issued. The contract must include, as a minimum, a separate CLIN, CDRL and tailored TMCR for TO development and delivery. At this point, the "offeror" becomes the "contractor," and becomes part of the TO IPT. (Chapter 4)

XI TO Guidance Conference – A TO Guidance Conference or Technical Interchange Meeting is held, usually within 60 days of contract award, to discuss the contract, introduce TO program participants, finalize strategy and schedules, and in general, resolve any issues not specifically detailed in the contract. The contrct cannot be changed without Procuring Contracting Officer (PCO) approval. (Chapter 6)

Figure 1-1. TO Acquisition Sequence Flow Chart (Sheet 2 of 4)

XII TO Quality Process – TO quality is assured through the use of quality processes in the development, testing and delivery of individual manuals. The TO IPT maintains insight into quality through participation in all aspects of the contractor's process, without interfering or hampering the free accomplishment of tasks. Quality TOs are adequate, safe and accurate; conform to government requirements; are compatible in depth and scope with maintenance and logistics support concepts; and comply with requirements for Reading Grade Level (RFL) and security classification and distribution restriction marking. Quality processes are on-going for the life of the program. (Chapter 7)

XIII Start TO Development – After the Guidance Conference, the contractor will begin the TO development process. In some cases, where the program involves acquisition of commercial products, commercial manuals may already exist, in which case they will be reviewed for suitability to support the Air Force's operations and maintenance concepts. In most cases, however, the TOs must be developed from scratch, using AF-approved Performance specifications (MIL-PRF-xxxxx). All data, including TOs, must be delivered in digital format unless this is proven not economical over the program's life cycle. TOs should be developed using Standard Generalized Markup Language (SGML) tagging according to the Document Type Definitions (DTDs) attached to the MIL-PRF specs. (Chapter 4)

XIV TO IPRs – In-Process Reviews (IPRs) are held periodically to review preliminary TOs for accuracy, compliance with contract requirements, adequate depth of coverage for Air Force support, and usability. These reviews may be held at specified percentages complete, or as determined necessary by the TO IPT. Generally, the more critical and complex a TO is, the more frequent are the reviews. Reviews may be conducted on-line via a telecommunications infrastructure established by a Contractor Integrated Technical Information Services (CITIS) agreement when possible. (Chapter 6)

XV Refine TOMP / Draft TOVP – The TO Manager and TO IPT must continually refine the TOMP to account for changes in schedules, programs, plans, etc. They must draft a TO Verification Plan (TOVP), to cover such areas as the timing, location, support requirements, personnel, etc. for verification of the program's TO. The TOVP may be an appendix or attachment to the TOMP. (Chapter 3)

XVI Product Baseline – This is not strictly a TO program event, but most of the following TO processes are dependent on having a baseline (or "production-configured") product as a reference.

XVII TOVP Finalized – At least 120 days before the first preliminary TOs are delivered to the government for verification, the TOVP must be finalized and provided to all participants. (Chapter 3)

XVIII TO Verification – Verification should begin as soon as possible after a base-line product is available. Verification involves the actual performance, under field conditions, of all procedures and processes detailed in TOs. They should be performed by personnel of the same training and experience as personnel exspected to use the system. Procedures which present a hazard to personnel or equipment, or which expend items such as explosive devices, may be verified by simulation or desk-top analysis. Non-procedural data may be verified by desk-top analysis or during IPRs. Any errors detected during verification are reviewed and provided to the contractor for correction of the TO. (Chapter 7)

XIX PrePub Reviews – Prepublication Reviews may be required before finalizing and formalizing preliminary TOs. The determining factors are TO complexity and the number and complexity of changes resulting from verification. This determination may be made by the TO Review Board (TORB) or Flight TORB, if chartered to review and control configuration after PTO delivery to the government for verification. The TORBs are usually composed of TO IPT members. The TORBs will approve PTOs for formalization. (Chapters 6 & 7)

XX Deliver Formal TOs – The preferred method for TO delivery is via on-line access to the contractor's database, using a CITIS agreement (DOD 5000.2-R). Prior to the implementation of JCALS, delivery should be in an Indexed Adobe™ Portable Document Format (IPDF) file. After JCALS is implemented, the SGML-tagged files should be delivered. (Chapter 4)

Figure 1-1. TO Acquisition Sequence Flow Chart (Sheet 3 of 4)

XXI TO Maintenance – Once TOs have been formalized and delivered to the Air Force, they enter the sustainment phase of their existence. Sustainment involves periodically updating TOs to maintain currency and accuracy. Factors driving updates include equipment modification, correction of errors, and improved methods of performing procedures, among others (chapter 9, and TOs 00-5-1 and 00-5-15). Sustainment also involves managing the requisition, distribution, reproduction and archiving of TOs (AFMCMAN 21-1). Maintenance begins once the TOs are formalized and continues through rescission of the TOs after the end item or system is retired from the inventory. Most Air Logistics Center acquisiting programs fall into the TO sustainment category. Although contracts for sustainment may use abbreviated procedures for contract preparation, basic requirements do not change: there must be a CLIN and contract exhibit (TO CDRL and tailored TMCR document); TO update verification may be required if changes are extensive or complex.

XXII System Retirement – This is the "termination" of cradle-to-grave program management. TOs do not necessarily rescind when a system is retired – frequently, TOs must be maintained to support Foreign Military Sales (FMS) programs. In addition, all TOs are maintained in the AF Repository for at least six years after the system is retired for AF use. (AFMCMAN 21-1)

Figure 1-1. TO Acquisition Sequence Flow Chart (Sheet 4 of 4)

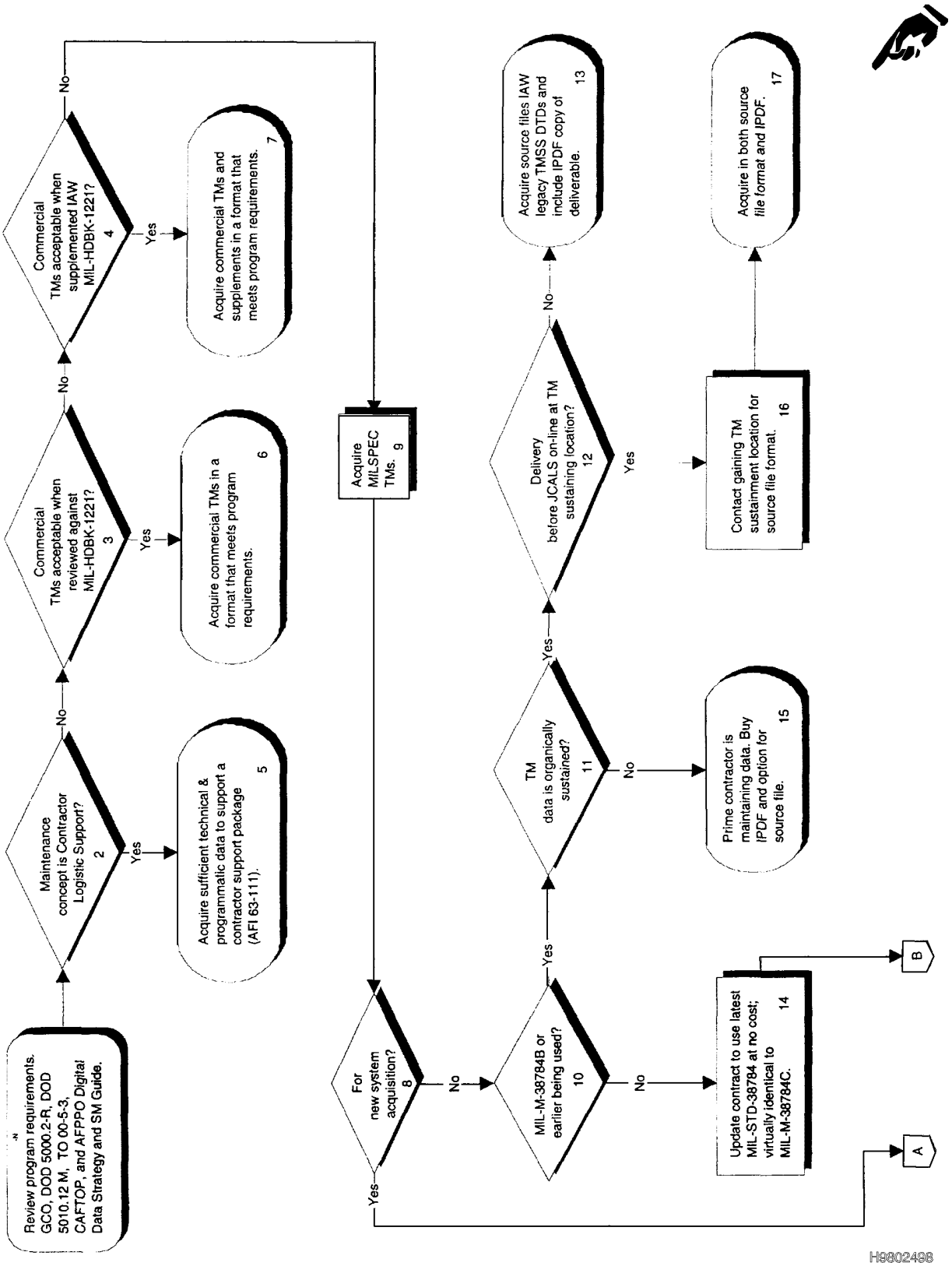

Figure 1-2. Digital TO Acquisition Matrix (Sheet 1 of 2)

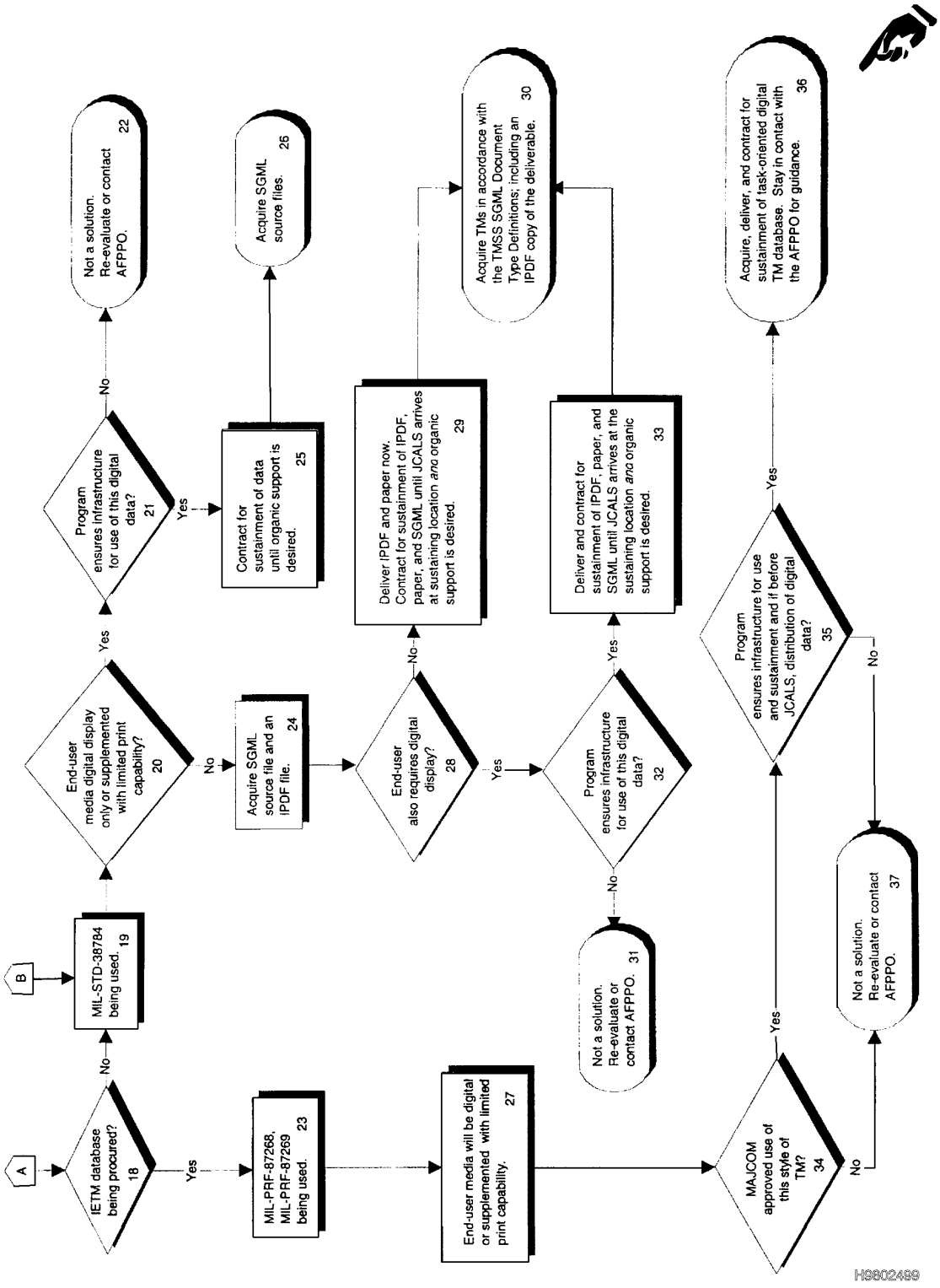

Figure 1-2. Digital TO Acquisition Matrix (Sheet 2 of 2)

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CHAPTER 2

RESPONSIBILITIES

2-1 GENERAL.

2-1.1 The Single Manager (SM) responsible for a program or commodity manages TO acquisition by establishing a TO Manager under the functional control of the Chief Engineer (when one is assigned).

2-1.2 If an acquisition or modification program is managed at a product center, the primary TO Manager responsibilities will be there also. The prime ALC will normally assume full TO Manager responsibility after system maturity (see definitions) or modification completion.

2-2 HQ USAF/ILMM.

ILMM has overall responsibility for policy governing the TO system. ILMM issues Air Force policy for managing the TO system and provides the final authority for waivers to that policy; ensures compatibility between the Flight Manuals Program (FMP) and the TO system; and approves all service tests and studies of new techniques for use in all facets of the TO system.

2-3 HQ AFMC.

2-3.1 Operations Division (DOO). DOO is Air Force OPR for AFI 11-215 and manages the FMP for HQ AFMC.

2-3.2 Engineering Directorate - Business Area Support and Special Projects Division (ENB). ENB is responsible for developing, coordinating and implementing AFMC TO system policies. In addition, ENB:

2-3.2.1 Is the Air Force and AFMC single point of contact for receipt, interpretation and dissemination of AF policy on the TO system. ENB reviews and recommends approval or disapproval of requests for waivers to Air Force TO policy, and assists users with problem resolution.

2-3.2.2 Ensures AFMC organizations comply with AFI 21-301 for the acquisition of joint service military systems and commodity TMs. ENB cooperates with other services to encourage cross-utilization of TOs.

2-3.3 OC-ALC/TILU: Manages and controls the Air Force system for TO numbering, indexing, storage, requisitioning and distribution.

2-3.4 MSG/ILJ. ILJ is responsible for developing, coordinating and implementing TO system business practices and procedures. ILJ:

2-3.4.1 Is the technical content manager (TCM) for 00-5-series TOs, AFMC Instruction 21-302 and AFMC Manual 21-1 on the TO system.

2-3.4.2 Evaluates and service-tests new techniques for TO data presentation, storage and retrieval.

2-3.4.3 Represents the Air Force in the DOD TM Specifications and Standards (TMSS) program. Manages and controls all TMSS for the Air Force. Develops and maintains currency of MIL-PRFs and MIL-STDs in coordination with Air Force and other Services' users and interested industry associations. Reviews and approves or disapproves requests for deviation or waiver to Air Force TMSS. Assists users with problem resolution.

2-3.4.4 Manages and controls the Air Force TMCR, TM-86-01.

2-3.4.5 Ensures the applicable TO MIL-PRFs and MIL-STDs require TO procedures to minimize the use of hazardous and environmentally noxious chemicals.

2-3.4.6 Manages and controls the Data Item Descriptions (DIDs) affecting the Air Force TO System.

2-4 AIR LOGISTICS AND PRODUCT CENTERS (ALCS & PCS).

Except as otherwise noted, the ALC or PC TO Home Office will:

2-4.1 Act as the ALC or PC single point of contact for interpretation and dissemination of policy and procedures affecting TOs. Be responsible for submitting center positions on proposed policy and procedure changes to OPRs for resolution and approval.

2-4.2 Develop proposals and criteria for TO system improvements and submit to MSG/ILJ for coordination and approval.

2-4.3 Provide specialized assistance, training and guidance to the SM and TO Manager (paragraphs 2-6 & 2-7) as required.

2-5 OTHER ACQUISITION ORGANIZATIONS.

Other organizations involved in TO acquisition, such as the Air Force Communications Agency (AFCA)/ GCSM and HQ Air Force Space Command (AFSPC)/LGMMD, will fulfill the applicable responsibilities of paragraphs 2-4, 2-6, and 2-7.

2-6 SINGLE MANAGER (SM).

Under the IWSM philosophy, the SM is responsible for all aspects of military system or commodity management from concept development through final disposition.

2-6.1 The SM must establish authorizations and funding for personnel to staff the TO Manager function at the appropriate location. The TO Manager is aligned functionally under the program's Chief Engineer, when that position has been established for the program. It is imperative the TO Manager be established as soon as possible, but no later than the "Program Definition & Risk Reduction" phase of a program or during initial staffing for any system or commodity buy, modification or sustainment effort.

2-6.2 For programs involving the acquisition or sustainment of aircraft, the SM will appoint an FMM to manage the FMP publication functions specified in AFI 11-215. The FMM is also aligned under the Chief Engineer when applicable.

2-6.3 The SM requests training and guidance, as required, for newly assigned personnel.

2-6.4 For acquisition and modification programs, both the SM's acquisition and sustainment activities will participate in requirements determination and preparation of inputs for the RFP and TOMP, help determine TO types and depth of coverage required, and review and approve or disapprove Contractor Furnished (Aeronautical) Equipment (CFAE/CFE) Notices.

2-6.5 The SM will arrange for depot maintenance support (operational equipment, facilities, support equipment, spares, consumables, and qualified personnel) to perform verification of depot TOs in accordance with schedules developed in coordination with the TO Manager. Program-unique hardware and support equipment will be provided by the SM.

2-7 TO MANAGER.

The TO Manager performs all functions of technical publication acquisition management as directed by this TO, DOD 5000.2-R, AFPD 21-3 and all pertinent directives. The TO Manager will:

2-7.1 Initiate and coordinate pre-contract planning for procurement and/or maintenance of TOs. Ensure that all affected commands and agencies (chapter 3 and appendix D) identify and document TO-related requirements. Review and coordinate on test plans to ensure that sufficient time and resources are allocated for TO verification.

2-7.2 Prepare, coordinate, and distribute a TOMP, when required, to all agencies affected. This plan will be developed as soon as possible in the acquisition program, and updated as required (chapter 3 and Appendix B).

2-7.2.1 Include processes to review and formalize TOs, review and approve TO and PTO change requests, and review and recommend corrective actions on deficiency reports affecting TOs. Establish controls to ensure that verified TOs are distributed prior to or concurrently with deployment of operational assets. For FMP publications, the FMM performs these functions according to AFI 11-215.

2-7.2.2 Establish satellite activities, such as TO Control Units (TOCUs) and Central TOCUs when required to assist with management of TO acquisition functions. This may include sharing program insight, assisting with reviews, providing local printing specialist support, or performing government receiving inspection.

2-7.2.3 When cost effective, establish a memorandum of agreement with the local Defense Contract Management District or Defense Plant Representative Office to use their assistance and expertise for TO program management.

2-7.3 Prepare TO inputs to all applicable contractual documents and other program documentation. Participate in contract fact finding and negotiations as required. The TO Manager is responsible for evaluating contractor proposals to ensure that exit criteria for TO verification are adequately defined in the IMP, that adequate resources and Government Furnished (Aeronautical) Equipment (GFE/GFAE) are planned for incremental verification and costs are reasonable and supported by the proposal. See chapter 5.

2-7.4 Ensure that MIL-PRFs, MIL-STDs, Data Item Descriptions (DIDs), and other contract documents are tailored to the extent necessary to impose only the essential needs for a particular application.

2-7.5 Ensure the manner and degree of tailoring accomplished during contract development is documented and fed back to the respective document preparing agency or activity for possible incorporation into the affected document. Submit TMCR tailoring that applies to multiple programs and suggested changes/updates to MSG/ILJ, 4375 Chidlaw Rd Ste 6, WPAFB OH 45433-5006, for possible incorporation into the TMCR.

2-7.6 Ensure all waivers and deviations to TO MIL-PRFs and MIL-STDs are controlled, documented, and forwarded to the preparing activity (PA) for approval or disapproval.

2-7.7 Plan, conduct and co-chair all TO conferences, meetings, reviews, and other joint agency efforts related to the TO acquisition program (chapter 6). Coordinate with the using command and support agencies to ensure their participation in all TO acquisition activities. Request contracting officer representation in meetings with the contractor as required.

2-7.8 Evaluate the contractor's QA process (IMP entrance and exit criteria, site visits, past performance) during proposal evaluation. Ensure TO development processes have adequate checks and balances, and procedures to cover standardization of writing. Ensure prime contractors levy QA requirements on vendors and subcontractors.

2-7.9 Provide the Responsible Test Organization with PTOs to use during Operational Test and Evaluation (OT&E). Support the Air Education and Training Command (AETC) with PTOs and other materials for training programs. The TO development effort will not be accelerated solely to furnish PTOs for training purposes.

2-7.10 Coordinate with other SPO functions, ALCs, and the using command(s) to ensure that TOs are compatible with tapes and computer programs used in the maintenance and operation of systems and commodities.

2-7.11 Ensure newly-developed TO procedures prevent pollution by reducing the use of hazardous materials and the release of pollutants into the environment. TO contents should comply with AFPD 32-70, Air Force 32-70 series instructions, and Federal Acquisition Regulations.

2-7.12 Ensure that TO technical content, method of presentation, style and level of writing are in line with the established maintenance concept, skills, and training of personnel who will operate and maintain the equipment. That is, they comply with the system performance specification (TRD/SRD) and applicable MIL-PRF TO specifications.

2-7.13 Establish and manage a quality Air Force verification program. Develop a TO Verification Plan (TOVP, Appendix C) not less than 120 days prior to the scheduled start of verification. Involve all appropriate government and contractor agencies. Coordinate with the using command to obtain personnel to perform the tasks to be verified. Develop and submit adequate budgets to support verification.

2-7.14 Review and, in coordination with the using command and support agencies, recommend contractual approval or disapproval of CFAE/CFE Notices (DI-TMSS-80067) recommending program manuals.

2-7.15 Ensure existing source data is used to the maximum extent possible and is not duplicated for TO development. Review source data to detect errors, deficiencies and nonessential material.

2-7.16 Review Support Equipment Recommendation Data (SERDs) for any TO impacts.

2-7.17 Develop budget requirements for TO acquisition (chapter 3). TDY expenses incurred as a result of attending TO acquisition or management functions will be funded according to AFI 65-601V1.

2-7.18 Authorize, with the mutual consent of the using command and SM, the use of verified PTOs (red-line, mark-up, or clean copies) on specific programs. See TO 00-5-1.

2-7.19 Review the "Lessons Learned" database pertaining to TO acquisition. Submit new items discovered during TO acquisition to the local Lessons Learned office.

2-7.20 Publish and distribute PTOs and formal TOs according to chapter 8.

2-8 USING COMMAND / TECHNICAL REPAIR CENTER (TRC).

The Using Command (or the TRC when depot-level TOs are involved) will:

2-8.1 Using commands will designate a focal point for TO acquisition programs and inform the TO Manager of the designated name, office symbol, and phone number. For acquisition of TOs to support new depot taskings, TRCs will identify a focal point within the affected maintenance activity.

2-8.2 Provide qualified personnel to support TO acquisition activities, with signature authority to represent their respective organizations. Provide personnel, including a Verification Team Manager (VTM) if required, to support the verification effort. The same people should be available for any future related or follow-on verification efforts to provide continuity of effort.

2-8.3 Assist the TO Manager to determine the scope of technical material to be included in TOs and the overall needs of the user.

2-8.4 Perform verification of TOs for assigned military systems and commodity end items in accordance with approved verification plans. Using Commands may designate or delegate this

responsibility to a separate test organization. Provide operational equipment needed for the verification effort in accordance with the TOVP.

2-8.5 Notify the TO Manager of any TOs which require post-publication reviews.

2-9 WEAPONS DIRECTORATE, SAN ANTONIO AIR LOGISTICS CENTER (SA-ALC)/NW.

SA-ALC/NW, Kelly AFB TX, is responsible for all Category 11N and 60N TOs during a nuclear weapon system's life-cycle. In addition, individual weapon and equipment managers in the nuclear weapons product group are TCMs for assigned TOs. Authority for acquisition of nuclear weapon system TOs is assigned to an aircraft or missile System Program Office (SPO) or a Lead Project Office (LPO) which may be located at either a Product Center or an Air Logistics Center. In any case, acquisition responsibilities are shared between the SPO/LPO and SA-ALC/NW.

2-9.1 Technology Division, SA-ALC/NWT. During the acquisition phase of a system, SA-ALC/NWT will:

2-9.1.1 Establish initial requirements by submitting responses to data calls from SPO data managers.

2-9.1.2 Assist TO Managers to ensure development of adequate nuclear weapons TOs. Review and coordinate on contractor-prepared plans when nuclear weapons TOs are included. Attend, support, and provide guidance at reviews and conferences for nuclear weapons TOs. Attend and support verification of nuclear weapon TOs except those listed in paragraph 2-9.2.

2-9.1.3 Coordinate, review and approve or disapprove CFAE/CFE Notices related to nuclear weapons systems and commodities.

2-9.1.4 Process AFTO Forms 22 on nuclear weapon TOs in accordance with TO 00-5-1. AFTO Forms 27 will be processed according to individual acquisition program TO Management Plans (TOMPs).

2-9.1.5 Establish and maintain responsibility for numbering, indexing, storing and requisitioning nuclear weapon TOs. Issue Initial Distribution (ID) labels for Category 11N and 60N TOs. Print and distribute formal nuclear weapon TOs and supplements.

2-9.1.6 Provide security classification guidance for Reentry Vehicle TOs.

2-9.2 Nuclear Weapons Integration Division, SA-ALC/ NWI (Kirtland AFB). NWI is the Air Force executive agent for the Joint Nuclear Weapons Publication System (JNWPS), developing Air Force policy and procedures through an Air Force/Field Command Defense Nuclear Agency/Department of Energy (DOE) interface. NWI is the TCM for all JNWPS TOs designated for Air Force use in TO 0-1-11N. NWI:

2-9.2.1 Reviews and coordinates on all DOE source data for inclusion in JNWPS publications. Reviews, coordinates and approves all proposed new JNWPS manuals and updates.

2-9.2.2 Provides Air Force representation on the JNWPS council and at all appropriate laboratory task groups, joint task groups, and demonstrations and reviews of technical procedures, retrofits, modifications, and/or data for inclusion in JNWPS publications.

2-9.2.3 Acts as OPR and technical writer for TO 11N-45-51B, Transportation of Nuclear Weapons Material (Supplement), Palletized Cargo.

2-9.3 Nuclear Weapons Integration Division, Operational Support Branch, NWIO. NWIO is the AFMC focal point for management of Category 1 nuclear weapon loading, air transport and delivery TOs, and Category 11N air-launched missile warhead mate/demate TOs listed in TO 0-1-11N-C. NWIO will ensure nuclear safety and nuclear capability requirements are integrated into these TOs. NWIO is the agent for and provides final signature approval of all Air Force product change proposals. NWIO will:

2-9.3.1 Perform applicable functions of NWT for assigned TOs. Transmit using command-coordinated requirements and schedules for the above TOs through the SM to the contractor.

2-9.3.2 Act as TCM for assigned nuclear weapon TO specifications and standards. Assist specification users with interpretation and application. Review specification deviation requests and recommend approval or disapproval to MSG/ILJ.

2-9.3.3 Provide nuclear weapon source data through the SM to the contractor. Assist in the development of PTOs to support DT&E of nuclear weapon systems. Review the contents of assigned nuclear weapon TOs for technical accuracy, adequacy, format and security classification. Chair verification efforts and reviews of assigned nuclear weapon TOs.

2-9.3.4 Review and approve/disapprove all AFTO Forms 22 or 27 {Preliminary Technical Order (PTO) Publication Change Request (PCR)/To Verification Record/Approval} and AF Forms 847 {Recommendation For Change Of Publication (Flight Publications)} on assigned nuclear weapon TOs according to this TO, TO 00-5-1 and AFI 11-215.

Update assigned nuclear weapon TOs according to this TO and TO 00-5-1.

2-9.3.5 Attend Flight Manual Review Conferences (FMRCs) and Command Reviews to ensure that nuclear weapon delivery data are correctly integrated into flight manuals and checklists, and weapon safety is not compromised in flight manuals.

2-9.3.6 Ensure the applicable SM, using commands and DOE are represented at reviews and conferences for all assigned nuclear weapon TOs.

2-9.3.7 Sanitize assigned nuclear weapon publications for non-US use.

2-9.4 Nuclear Weapons Integration, Missile Branch, NWIM. NWIM must review and approve ICBM Critical Component TOs prior to publication.

2-9.4.1 Evaluate, review changes and maintain process records of proposed Operation Certification (OPCERT) procedures for ICBM Critical Components.

2-10 AIR EDUCATION AND TRAINING COMMAND (AETC).

AETC will assist the TO Manager with TO acquisition by participating in TO Planning/Requirements Conferences, Guidance Conferences, IPRs, verification, and pre-publication reviews as required to determine training needs and requirements.

2-11 USAF AMMUNITION CONTROL POINT (ACP), OO-ALC/LIW, AND TACTICAL MISSILE CONTROL POINT (TMCP), WR-ALC/LKG.

OO-ALC/LIW, Hill AFB UT, is the Air Force center of expertise for conventional munitions and explosives, and WR-ALC/LKG, Robins AFB GA, is the center of expertise for all air-to-air and most air-to-ground missiles. The control points are TCMs for all munitions and explosives TOs and custodians of all munitions loading Standard Data Packages (SDPs) (chapter 12). These control points will:

2-11.1 Assist in development of nonnuclear munitions TO specifications.

2-11.2 Attend TO acquisition reviews and verification, provide explosive safety standards and criteria, and ensure standardization of terminology and procedures in nonnuclear munitions TOs.

2-11.3 Incorporate nonnuclear munitions source data into existing general conventional munitions, missile and explosives TOs (Categories 11, 21, 31, 33 & 35).

2-11.4 Distribute source data to other agencies responsible for munitions TO development and update.

2-11.5 (ACP only) Maintain, update and distribute formal munitions family-group Standard Data Packages (SDPs).

2-11.6 (ACP only) Prepare and distribute an SDP index quarterly.

2-12 46TH OPERATIONS GROUP (OG)/OGS.

The 46OG is the Responsible Test Organization (RTO) for DT&E of most nonnuclear munitions and aircraft stores acquisition and modification programs (chapter 12). 46OG/OGS will:

2-12.1 Assist the munitions and aircraft TO Managers with development of contracts and plans for nonnuclear munitions and stores source data and TO acquisition.

2-12.2 Act as TCM for nonnuclear munitions TO specifications and data item descriptions. Assist with specification interpretation.

2-12.3 Attend TO reviews and verifications to ensure use of standardized formats, terminology and procedures.

2-12.4 Develop generic procedures for delivery, loading and handling of nonnuclear munitions and aircraft stores.

2-12.5 Act as the functional manager for maintaining accuracy of nonnuclear munitions -33 and -34 TOs and data.

2-12.6 Provide technical expertise for development of updates to -33 and -34 data.

2-13 412 TEST WING.

The 412 TW is the RTO for DT&E of most aircraft and many aircraft systems acquisition and upgrade programs. The TO Development Office, 412LSS/LGLL, is a center of expertise for assisting program TO Managers with the acquisition, development, review and verification of TOs. When tasked by the SM (usually in a Program Introduction Document - PID), LGLL will:

2-13.1 Assist missile and aircraft TO Managers with planning and development of RFPs, TOMPs, and TOVPs.

2-13.2 Participate with the Integrated Product Team (IPT) in TO reviews to ensure compliance with style, format, and technical content requirements. Assist the IPT with insight into QA processes.

2-13.3 Manage the government's TO verification program.

2-13.4 Participate in TO Review Boards (TORBs) and manage the formalization and maintenance of TOs.

CHAPTER 3

PLANNING, BUDGETING & SPECIAL REQUIREMENTS

3-1 GENERAL.

TOs are a primary consideration in the dynamic process that produces a balanced logistic support concept for new or modified military systems and commodities. Planning must acknowledge the relationship between TO development, military system and/or commodity testing, other logistics activities, production and deployment. Because each program has unique characteristics, this chapter will address generic program phases. The TO Manager should translate these phases to terms used for the specific program.

3-2 ACQUISITION STRATEGY.

The following paragraphs outline a typical TO acquisition program for a major new system. Detailed procedures are covered in the referenced chapters. Programs of lesser scope (such as for commodities or modification of existing equipment) may not require all steps or functions.

3-2.1 Program Planning. The first step in any program or project is to determine the requirements. The TO Manager initiates this process for TOs by reviewing program documentation and developing a preliminary plan of action (paragraph 3-3).

3-2.2 Requirements Conference. The TO Manager will call and chair a TO Planning/Requirements Conference for new program starts. The TOP/RC is the nucleus of the Integrated Product Team (IPT – paragraph 3-3.2) working a TO program and includes the using command, other AFMC managers and support agencies. The TOP/RC finalizes the requirements to input to the Request for Proposal (RFP), and formalizes the initial TOMP (paragraph 3-3 and chapter 6).

3-2.3 Proposal Evaluation (chapter 5) and Contract Award. During source selection, contractor proposals will be evaluated using RFP section M criteria, and will be ranked according to several factors (including such things as past performance, demonstrated understanding of requirements, and price.) A contract is negotiated and awarded to the winning bidder.

3-2.4 Guidance Conference. The IPT, with the contractor included, holds a Guidance Conference (chapter 6) where program plans are reviewed and approved, and schedules are established. The timing is usually within 60 days after contract award to avoid delaying contractor tasks. The contractor can initiate TO preparation after the TO guidance conference.

3-2.5 TO Development. During TO preparation, the IPT conducts IPRs (chapter 6) to evaluate progress and compliance with contractual requirements. TO format and content requirements are imposed by the contract. Safety and health reviews (chapter 10) will be included in IPRs. The contractor will apply quality management principles to ensure TO adequacy and accuracy during the development process.

3-2.6 Verification. All PTOs shall be verified by the government to the maximum extent possible prior to formalization and use in the operational environment (chapter 7).

3-2.7 Pre-Publication Reviews. The TO Manager and IPT will ensure that verification comments and corrections are incorporated and that manuals meet contractual requirements. A formal pre-publication review may be required.

3-2.8 Publication and Delivery. The TO Manager will arrange for reproduction and ID of TOs and updates according to chapter 8 and TO 00-5-2. The distribution of all PTOs is the responsibility of the TO Manager.

3-2.9 TO Maintenance. The TO Manager, in conjunction with the TCM, will maintain accuracy and adequacy of TOs for the entire life cycle of the military system or commodity, according to TO 00-5-1 and chapter 9 of this manual.

3-2.10 Foreign Military Sales. When applicable, the TO Manager will establish contracts and manage development of TOs to support Foreign Military Sales (FMS) programs (chapter 11).

3-3 INITIAL PLANNING.

The TO Manager for an acquisition program must be established as early as possible to develop cost management planning requirements and inputs to the Statement of Objectives (SOO), evaluation criteria and Instructions to Offerors (ITO) sections of the RFP (chapter 4).

3-3.1 The TO Manager will review the Mission Need Statement (MNS), Program Management

Directive (PMD), Operational Concept, Maintenance Concept, TO MIL-PRFs, and other documents to develop a preliminary TO Management Plan (TOMP) and wording for the SOO, evaluation criteria, and ITO.

3-3.1.1 The SOO should specify TO objectives in performance-based terminology. Evaluation criteria must support the SOO and be traceable to the ITO sections. The ITO must be explicit enough to allow the contractor to tailor a TMCR for submittal with the proposal.

3-3.2 TO Integrated Product Team (IPT). The TO Manager must assemble an IPT consisting of all the agencies affected by program TOs, or ensure they are part of the overall program IPT. As a minimum, the team must include representatives from other AFMC activities, including the FMM when appropriate, the prime ALC equipment specialists, and the using command(s). The safety and nuclear surety offices (chapter 10), AETC and the RTO should be included on the team. Contractor representatives should be included as soon as the contract is issued, with the contracting officer's concurrence.

3-3.2.1 Acquisition of certain types of TOs and/or source data requires unique management and coordination efforts. The TO Manager must ensure that the OPRs for applicable "Special Requirements," paragraph 3-6 and its subparagraphs, are included in the initial TO requirements conference, and their requirements are included in the TOMP and RFP package.

3-3.3 TO Planning/Requirements Conference. The TOP/RC, held before the program's data call, brings together the members of the TO IPT to plan the TO program. Membership continuity in subsequent conferences and reviews must be maintained whenever possible. Once the program's TO requirements are developed, inputs to the RFP are drafted and the TOMP is finalized. If required, the IPT will prepare a draft Memorandum of Agreement (MOA) or Program Introduction Document (PID) between the SM and any test organizations tasked to support the development effort. The MOA or PID is required to justify organization manning and funding.

3-3.3.1 When a customer establishes requirements for more expensive or extensive TOs, it is the responsibility of the IPT to question and evaluate the increased requirements. Consideration should be given to cost versus effectiveness, tradeoffs and alternatives. When disagreements cannot be resolved, the TO Manager will elevate the matter for resolution.

3-3.3.2 When a significant change in hardware configuration occurs, such as a new model/design/series (MDS), a separate set of basic or supplemental TOs must be considered. Presenting changed information in new TOs makes it easier to understand and use the manuals and simplifies the control of classified or restricted information.

3-3.4 Request for Proposal (RFP). The TO Manager will make inputs to the SM's data call to ensure that TO-related data is placed on contract. These requirements will not be altered by the SM or Data Manager without the concurrence of the TO Manager, using command and support agencies. The ITO will inform contractors responding to the RFP about information to be included in their proposal. Evaluation Criteria (section M of the RFP) must be traceable to both the SOO and ITO.

3-3.5 TO Management Plan. The TOMP is developed, coordinated and approved at the TOP/RC. It outlines management policies and procedures for the development, acquisition, reproduction, and distribution of TOs on any military system or commodity program. The TOMP must address timely acquisition of PTOs or source data with a format and depth of coverage adequate to support test activities. The TOMP is a dynamic management tool and should be updated as required during the entire TO acquisition program. The TOMP may be an attachment to the Single Acquisition Management Plan (SAMP). The TOMP is not required for less-than-major programs. See Appendix B for TOMP requirements.

3-3.6 The TO Manager will work with other SPO functions during the contracting process to ensure that TO program support requirements (such as engineering data and hardware to support verification) are in the final contract.

3-3.7 Budgeting and Cost Estimating. The TO Manager is responsible for estimating the cost of TOs needed to support the military system or commodity. The cost of acquiring TOs includes writing, editing, supporting conferences and reviews, verification, preparation of reproducible masters, printing and distribution, routine maintenance, and TO-related travel (AFI 65-601V1). These costs are chargeable to the same budget program activity code used to finance hardware costs during initial acquisition. The TO Manager must begin the cost estimating process shortly after assignment to ensure adequate program funds are available. All information sources should be explored, including but not limited to historical data from other programs, contractor estimates, and prior experience. The SM must ensure the annual program budget submission includes TO requirements. See

AFMCMAN 21-1 for additional information on TO budgeting.

3-4 TO DEVELOPMENT.

3-4.1 Early TO development covers the acquisition period when TO contracts are issued, contractor guidance conferences are held, and the contractor actually begins development of the required TOs. It is critical to establish proper TO formats and coordination channels to streamline the development process.

3-4.2 The TO Manager will hold a TO Guidance Conference (chapter 6) with the IPT and contractor to ensure understanding of contract requirements. The IPT will review schedules, support requirements, additional TO specification tailoring, and procedures for all phases of TO development and production.

3-4.3 During the later stages of development, hardware and software design is becoming stable, and development tasks in many areas are nearing completion. In-Process Reviews (IPRs, chapter 6) are taking place during this period, and the TO Manager may be required to conduct many reviews within a short period of time. As hardware becomes available, the contractor provides PTOs for Air Force verification, pre-publication reviews, and formalization. The TO Manager must monitor formation of the verification team and performance of verification, review and approval of changes generated by verification, and the final TO approval process, among other tasks. The TO Manager may be required to refine TO schedules to support verification opportunities. Equipment availability must be closely monitored. Testing may cause equipment failures which could deny assets to the TO verification effort.

3-4.4 TO Verification Plan. Planning for verification of TOs should be initiated at the TO Planning/Requirements Conference (or by the TO Manager if no conference is held), based upon the needs of the using command and other affected agencies. Identification of procedures to be verified, the verification site, the Verification Team Manager (VTM), support equipment and consumables required, schedules, use of substitute equipment and contractor support must be accomplished well in advance of beginning a verification program (contractor support is determined in the contract). Verification must be given a priority equal to other development activities, if a supportable military system is to be delivered. The TOVP must be finalized during the Engineering and Manufacturing Development phase of acquisition. See Appendix C for TOVP requirements.

3-4.5 Lessons learned indicate that where verification is left to "targets of opportunity," TOs are not usable at delivery. The TO Manager must take advantage of unscheduled opportunities for verification, while maintaining a constant emphasis on meeting the verification schedule.

3-5 TO MAINTENANCE AND SYSTEM SUSTAINMENT.

3-5.1 During the early "Production, Fielding/ Deployment & Operational Support" phase of an acquisition program, responsibility for TO maintenance remains with the SM's acquisition team. When the program moves into the sustainment ("Operational Support") area of the phase, this responsibility usually transfers to the SM's TO Manager at the ALC.

3-5.2 The TO Manager must ensure that the TOs remain current and accurate (chapter 9), and oversee the completion of any remaining verifications, reviews or updates before entering the sustainment phase. TOs may move into the sustainment phase on an individual basis as they are formalized.

3-6 SPECIAL REQUIREMENTS.

Most TO development contracts will require procurement of special purpose TOs and source data which require different acquisition and management procedures. These TOs and data require coordination with or even management by agencies outside the standard process. The types of TOs or source data requiring special treatment include the following:

3-6.1 Aircraft Battle Damage (Assessment and) Repair (ABDR) (-39 Series) TOs. These manuals are developed according to MIL-PRF-87158 (Manuals, Technical: Aircraft Battle Damage Assessment & Repair), and managed according to AFI 21-105. ("Assessment" is very seldom used in referring to these TOs.) SM-ALC/TIED is the Air Force OPR for ABDR, and must be notified of acquisition activities involving these procedures. Developers may request SM-ALC/TIED assistance in developing procedures.

3-6.2 Nuclear Weapon (Categories 11N and 60N) TOs. The agencies responsible for these TOs and manuals are specified in paragraph 2-9 and TO 00-5-1, chapter 2. These agencies must be included in all activities related to the acquisition and maintenance of these TOs.

3-6.3 Ballistic Missile Codes (21M-XX-16 Series) TOs. The National Security Agency (NSA), Section V62, is the focal point for the acquisition agency TO Manager for ICBM launch and targeting codes and procedures. NSA retains this responsibility

for the entire life-cycle of the military system. The TO Manager shall ensure developmental codes data and procedures are routed to this organization for coordination and approval.

3-6.4 Calibration and Metrology (Category 33K & System-Unique) TOs and Procedures. AFMETCAL Detachment (Det) 1/ML is the Air Force OPR for calibration and metrology procedures. Det 1 will approve calibration requirements and inter vals, and verify and approve calibration procedures in TOs. Det 1 will also determine if require ments are to be included in system Operations and Maintenance (O&M) TOs or if a separate TO is required. Det 1 usually prepares stand-alone TOs from source data acquired from the contractor by the TO Manager. Procedures to be included in other TOs are usually contractor-developed and must be verified and approved by Det 1. Det 1 must review and approve or disapprove CFAE/CFE Notices which identify commercial or MIL-PRF calibration manuals. Det 1 provides TO num bers for both MIL-PRF TOs and approved commer cial manuals. When requested, they will assist the TO Manager with calibration procedure develop ment and acquisition. Developers may request Det 1 assistance in developing calibration proce dures. Verification of 33K TOs will be performed by assigned field level Precision Measurement Equipment Laboratories (PMELs) within 45 days of their receipt of a Preliminary TO.

3-6.5 Corrosion Control (1-XX-23, 10-XX-9, & 21-XX- 22 Series) TOs and Procedures. These TOs and corrosion control procedures will be developed by the contractor according to the technical requirements of MIL-PRF-87929 (Manual, Techni cal: Operation and Maintenance Manuals in Work Package Format). AFRL/MLS-OLR, 325 2nd St Bldg 165, Robins AFB GA 31098-1639 is the Air Force OPR for corrosion control. The TO Manager must contact AFRL early in the planning stages to establish requirements and schedules for TO review and approval. The SM must establish a Corrosion Prevention Advisory Board (CPAB) to evaluate the adequacy of corrosion prevention measures included in the system and/or commod ity design, review the contractor's approach to pre vention, and advise on corrosion prevention mat ters. Membership and responsibilities of the CPAB are contained in AFI 21-105. The contrac tor, through the TO Manager, may request AFRL assistance to develop new procedure

3-6.6 Aircraft Emergency Rescue Information (TO 00-105E-9). The source data for these procedures will be developed by the contractor according to a DID DI-TMSS-81532, Aircraft Emergency Rescue Information (Fire Protection) Source Data, and provided to the Air Force Civil Engineering Support Agency (AFCESA)/CEXF, with a copy to Detachment (Det) 63, AAC/CC. The DID is required for ALL aircraft programs.

3-6.7 Explosive Ordnance Disposal/Render Safe Procedures (EOD/RSP) (Category 60) Manuals and Source Data. Det 63 is the Air Force liaison with the Naval EOD Technology Division (NAVEODTECHDIV), Indian Head MD. Det 63 is the single point of contact with the Navy-managed Joint Service Nonnuclear EOD Publication System, responsible for technical acceptance of EOD source data for Air Force military systems and commodities and development of Category 60 EOD TOs to support those systems and commodities (chapter 12). Additional responsibilities for Det 63 are specified in DODD 5160.62 and AFI 32-3002.

3-6.7.1 The TO Manager is responsible for acquisition of EOD/RSP source data for development of nonnuclear Category 60 TOs (chapter 12), using DID DI-SAFT-80931.

3-6.7.2 Nuclear warhead and reentry vehicle procedures (Category 60N TOs) will be developed in accordance with the 1964 Joint Nuclear Weapons Publication System (JNWPS) Agreement between the DOE and DOD. In essence, that agreement provides that nuclear source data will be prepared by Defense Nuclear Agency (DNA) and submitted to the agency responsible for preparing EOD TMs for integration with the nonnuclear interface data. The TO Manager is responsible for providing this interface data.

3-6.8 Make-Safe Procedures for Public Display (TO 00-80G-Series). HQ AFMC/SE is the Air Force OPR for these procedures. The contractor will develop the procedures according to TO 00-80G-1 and MIL-STD 38784. The procedures must be reviewed and approved by HQ AFMC/SE.

3-6.9 Nonnuclear Munitions Loading (-33 Series), Weapon Delivery (-34 Series) and Positioning & Tiedown (-38 Series) TOs. The procedures for -33 and -34 TOs and source data are covered in chapter 12.

3-6.9.1 Positioning and Tiedown (-38) TOs. For -38 TOs, the munitions TO Manager will acquire source data according to MIL-S-38794 from the prime contractor for the munitions item, and provide it to the USAF ACP/LIW, Hill AFB UT, for development of the TOs.

3-6.9.2 Strategic Systems TOs. TOs for munitions used with strategic aircraft systems are acquired from the contractor like any other opera tion and maintenance TOs. HQ ACC/XRS and/or 1st Combat Evaluation Group (CEVG) perform verification of these TOs.

3-6.9.3 Integrated Combat Turnaround (ICT) (-33-1-4 series) TOs. These munitions and stores loading TOs provide procedures for hot loading of aircraft in combat situations. ("Hot" loading includes simultaneous munitions loading, aircraft maintenance, and refueling with one or more engines running.) The procedures are based on a Systems Safety Engineering Analysis performed according to MIL-STD-882 and approved by HQ USAF/ ILMM. ICT TOs will not be changed without prior approval from HQ AFMC/SES.

3-6.10 Other Nonnuclear Munitions TOs. TOs in Categories 11, 21, 31, 33 and 35 and source data for updating general Category 11 TOs relating to nonnuclear munitions and explosive components will be acquired by the TO Manager and managed by the USAF ACP (OO-ALC/LIW), or for air-launched missiles, the USAF Tactical Missile Control Point (TMCP, WR-ALC/LKG). These TOs and data cover such areas as commodity item maintenance (-7 series), Munitions Serviceability (11A-1-10), General Disposal of Conventional Munitions (11A-1-42), Hazard Classification and Fire-Fighting (11A-1-46), Storage & Outloading Drawings (-61 series), and Inspection & Assembly of Nonnuclear Munitions (11A-1-63) for munitions and explosives. The TOs and data must be reviewed and approved by the ACP or TMCP. Any tasking for EOD support in these TOs must have prior coordination with Det 63, AAC/CC.

3-6.11 Non-Destructive Inspection (NDI) (1-XX-36, 2-XX-9 or 21M-XX-26 Series) TOs and Procedures. These TOs and NDI procedures will be developed by the contractor according to the technical requirements of MIL-PRF-87929. SA-ALC/ TIFN is the Air Force OPR for the NDI program. The TO Manager must contact TIFN prior to initiating contracts for TO development for any military system or commodity, to establish requirements and schedules for TO development, review (including IPRs), and approval. The SM must establish an NDI Advisory Board with membership and responsibilities as specified by AFI 21-105. The contractor may contact SA-ALC/TIFN through the TO Manager for assistance.

3-6.12 Work Unit Code (WUC) (-06 Series) Manuals and REMIS "Push-Down" Tables. System-specific coding in these manuals and tables is the responsibility of the prime ALC TCM. HQ AFMC is OPR for the other data elements (Support General WUCs, How Malfunctioned Codes, etc.) For a specific system, the SM procures the equipment listing from the contractor, and the prime ALC is responsible for assigning the codes in accordance with MIL-PRF-38769, Manuals, Technical: Work Unit Code.

3-6.13 Critical Alloy and Precious Metals Conservation (TO 00-25-113) Procedures and Requirements. The TO Manager will acquire source data for these procedures from the contractor and provide it to the prime ALC, who will develop, prepare, and publish the 00-25-113-series TOs and changes or supplements required for assigned systems and commodities in accordance with TO 00-25-113. The source data shall conform to TO 00-25-113 requirements.

3-6.14 SEEK EAGLE Certification. SEEK EAGLE (AFI 63-104) is the Air Force program to certify all aircraft and store configurations (including weapons, fuel tanks, dispensers, pods, etc.) for loading, safe carriage and employment, and ballistics accuracy. The Air Force SEEK EAGLE Office (AFSEO)/SKD, monitors this certification process. SEEK EAGLE products are source data for inclusion in the aircraft operational flight program and in Category 1 aircraft and stores TOs. The affected munitions, stores, and aircraft TO Managers must coordinate with the AFSEO to determine user priorities and which TOs will be specifically monitored for the SEEK EAGLE certification process. The TO Managers must provide copies of status reports on the selected TOs to the AFSEO, and ensure that the TOs and/or updates are published in time to meet using command need dates.

3-6.15 Exterior Finishes, Insignia, and Markings (TO 1-1-4). When applicable, the TO Manager must ensure that source data on new systems is acquired to update TO 1-1-4.

3-6.16 General Reference TOs for Electronic Cable Assembly Components (00-25-255-Series). SA-ALC/ LDAK is the OPR for these general reference TOs. This series of TOs provides data for military and commercial electronic cable components for aircraft and test equipment. The source data for new connectors, cables and wiring in **any** Air Force system or commodity will be identified by the contractor and provided to SA-ALC/ LDAK.

3-6.17 Powered Aerospace Ground Equipment (AGE) Generic Servicing Inspection Workcards. There are two sets of generic servicing inspection workcards for powered AGE which contain all known and relevant inspection requirements. One set of workcards applies to bomblifts and the other set applies to other powered AGE. SA-ALC/LDE manages these workcards. The TO Manager acquiring new AGE must ensure that source data to update these workcards is provided to LDE.

3-6.18 Aircraft Cross-Servicing Guide. Aircraft cross-servicing guides are additional manuals that accompany aircraft whose missions require them to deploy in support of North Atlantic Treaty

Organization (NATO) and Air Standardization Coordinating Committee (ASCC) activities. These manuals are developed according to MIL-DTL-22202 and numbered by OC-ALC/TILUB. Cross-servic ing guides are not part of the organizational main tenance manual set (MIL-PRF-83495). However, these guides provide cross-references for various types of servicing and loading equipment used by ground personnel and are used in conjunction with aircraft servicing and loading TOs.

CHAPTER 4

CONTRACTING

4-1 GENERAL.

TOs are usually developed and acquired through a hardware acquisition or standalone TO contract with a prime or integrating contractor. In some cases, TOs may be developed by an independent contractor or organic government resources. TO objectives are specified in an RFP and detailed requirements are listed in a negotiated contract (paragraph 4-4).

4-1.1 The government's data infrastructure and CALS implementation strategy is documented in the Government Concept of Operations (GCO - paragraph 4-3). TO program inputs are included in either a Statement of Work (SOW - paragraph 4-5) or Statement of Objectives (SOO - paragraph 4-6). The SOO is the preferred method for most new acquisition efforts. Additional inputs are made to the Instructions to Offerors (ITO - paragraph 4-8), Evaluation Criteria (paragraph 4-7), and must include DD Forms 1423, Contract Data Requirements List (CDRL - paragraph 4-9) and a TMCR (paragraph 4-10). Evaluation Criteria inform offerors of the **minimum** requirements for the program.

4-1.2 Procedures for the joint acquisition of TOs with or through other government agencies are specified in AFJI 21-301.

4-2 CONTINUOUS ACQUISITION AND LIFE CYCLE SUPPORT (CALS).

CALS is a strategy to share integrated product (digital) data through a set of standards to achieve efficiencies in business and operational mission areas. The main goal of CALS is to develop a seamless defense enterprise in which the knowledge products (data) of acquisition are immediately and rapidly available to authorized users, while maintaining near immediate currency and quality of the information. The original source activity should be responsible for maintaining the data. DoD-wide practices include:

4-2.1 All data should be delivered in digital form, unless life-cycle time or costs would be increased. DoD policy allows use of CALS military specifications and standards without waiver, but SMs should use commercial standards whenever possible.

4-2.2 The SM has two options for delivery of data: on-line access via telecommunications (preferred IAW DOD 5000.2-R), or physical delivery on various digital media. Contractor Integrated Technical Information Service (CITIS) on-line access implementation requires a separate CITIS Contract Line Item Number (CLIN).

4-2.3 Depending on use, legacy data may be retained in its native format, or may be recreated as a processable (digital) file. (The Air Force is digitizing all legacy data except that prohibited by law or contract provisions.)

4-2.4 The SM is responsible for determining which of the various Automated Information Infrastructure Systems (AIISs) will be used to support the program. Digital data acquired for the program should be compatible with these systems, especially the Joint Computer-Aided Acquisition and Logistics Support (JCALS) system for TOs, the Joint Engineering Drawings Management Information and Control System (JEDMICS) for engineering drawings, and the Configuration Management Information System (CMIS) for configuration data.

4-2.5 The SM should prepare a GCO as part of the acquisition planning and requirements determination activity. The GCO is included in the RFP as government furnished information (GFI) for offerors.

4-3 GOVERNMENT CONCEPT OF OPERATIONS (GCO).

The SM should appoint a senior individual to research and foster implementation of CALS in the program. The TO Manager, Data Manager, and Engineering Data Manager will assist this individual in developing the GCO (DOD 5010.12-M). GCO development is an 8-step process:

4-3.1 Identify Data Type Deliverables (normally identified on CDRLs). Data types selected will influence data format, interchange standards, and media considerations.

4-3.2 Identify Data Users. These are the functional organizations who will need access to the data.

4-3.3 Identify Data Use and Processing. These requirements are the ways in which the user will

process chosen data types. The five methods of processing include View Only, Comment/Annotate, Extract/Process/Transform, Update/Maintain, and Archive.

4-3.4 Identify User Infrastructure. The program office must ensure the authorized users can receive, store and maintain the data. Infrastructure includes Hardware, Software, Networks, Communications, Computer Users, and Computer Support Personnel.

4-3.5 Identify Type of Data Deliverable. The two primary types are Composed Products (human-readable in digital image format) and Processable Data Files (machine-readable data for input to editing and composition software programs).

4-3.6 Determine Data Format. Data formats for delivery are determined by the type of deliverable. Chosen formats will affect interchange standards and media used. Possible data formats include Document Image, Text, Graphics, Alphanumeric, Audio/Visual, and Integrated Data Files.

4-3.7 Determine Data Interchange Standards. Complying with data exchange standards will maximize the SM's ability to share data across dissimilar information systems. The following standards are used with the data formats above: Document Image, Text, Graphics, and Application-Unique Data Standards.

4-3.8 Determine Data Delivery and Access Media. These are specified through the CDRLs and specific Data Item Descriptions (DIDs), and can include on-line access through telecommunications or physical delivery on magnetic or optical media. Physical delivery should be considered when the data would overload the delivery network. Preference should be given to on-line access for updating, storing, controlling, reproducing and distributing data items.

4-4 REQUESTS FOR PROPOSAL AND CONTRACTS.

The TO IPT (paragraph 3-3.2) develops draft TO program objectives and criteria as inputs for the SOW or SOO, Evaluation Criteria and ITO. The drafts are provided to the program's contracting office and data manager, along with a partly-tailored TMCR for inclusion in the RFP system performance specification. Other TO program-related data, such as reference material, lists of acronyms and definitions, etc., may be included in the proposal Technical Library. TO requirements must not conflict with other contract schedules, locations or tasks. The TO Manager must ensure that all affected agencies review the finalized RFP prior to sending it to offerors for proposal preparation.

4-4.1 Offerors respond to an RFP with proposals for satisfying Air Force objectives. The TO Manager and TO IPT review and evaluate the proposals to determine how fully they support program objectives (chapter 5). The IPT must determine the impact of any differences between proposals and the RFP, and whether or not the differences are acceptable. The TO Manager works with the offerors (through the contracting office) to resolve these issues. In formal source selections, this effort is generally accomplished by the Source Selection Evaluation Team (on which the TO Manager should be a member).

4-4.2 Offeror proposals submitted in response to an RFP will include any documents the RFP requires. That will usually include some combination of a SOW, completed (separately priced) TMCR for TOs, recommendations for any other data required, an Integrated Master Plan (IMP – Appendix A), and/or an Integrated Master Schedule (IMS – Appendix A) covering the management and control of the acquisition program. The offerors' responses indicate how they intend to satisfy the RFP requirements.

4-4.3 During source selection the offerors and the Government negotiate unresolved issues. The final evaluation results are presented to a Source Selection Authority who determines which offeror best satisfies the RFP. That offeror is subsequently awarded the contract. Once contracts are awarded, they may be changed only through the Procuring Contracting Officer (PCO).

4-4.4 The government will develop CDRLs based on approved contractor data recommendations. The TMCR, attached to the CDRL for delivery of TOs, will become a separately-priced exhibit to the contract (DFARS 227.7103-2 and DOD 5010.12-M).

4-5 STATEMENT OF WORK.

A SOW defines, either directly or by reference to other documents, all tasks to be performed for the program covered by the contract. The SOW is limited to what is required; qualitative, quantitative and other requirements (how, when and where) will be contained in specifications, the IMP and CDRLs (MIL-HDBK-245 & DOD 5010.12-M). Use of a SOW in the RFP is usually limited to follow-on or small program contracts, as directed by the SM.

4-5.1 For government-prepared SOWs, TO requirements should be limited to performance-based statements, e.g., "The contractor shall develop the technical order types specified in the TMCR (Exhibit ____) to support (program name). (CDRL (#)). Additional statements, covering the

applicable task areas (Appendix E, ITO suggestions), may either be added to the SOW or to the front of the TMCR as required to fully describe TO program requirements.

4-5.2 Offeror-prepared SOWs may vary in detail, dependent upon the detail in the IMP. The proposal's SOW and IMP together should specify the tasks, events and processes the offeror will use to satisfy RFP requirements.

4-6 STATEMENT OF OBJECTIVES.

4-6.1 The SOO is a government-prepared attachment to either Section J or L of the RFP. The SOO provides the basic, top-level objectives of the acquisition program. Additionally, program objectives focus on the higher risk areas individually, so they can be addressed directly in the evaluation criteria. These higher risk areas are usually valid discriminators in the source selection process. Areas of relatively low risk are generally covered by higher level objectives. The SOO allows the offeror maximum flexibility to develop cost-effective solutions and to propose innovative alternatives to meet the stated objectives. It also allows the government to assess the offeror's understanding of the effort to be performed, by eliminating the how to" instructions typically provided in a SOW (MIL-HDBK-245).

4-6.2 Depending on the level of risk, TO objectives will be addressed in a variety of ways. For most acquisition programs, the TO objective would be covered with a statement such as "Provide quality technical manuals and source data to support the objective of Air Force organic system operation and field and depot-level maintenance." (Actual wording will depend on program operations and maintenance concepts.) Where TOs are considered a low-risk area, they may be covered by the more general logistics support objective.

4-7 EVALUATION CRITERIA.

Evaluation criteria, Section M of the RFP, will be developed based upon the SOO and will drive development of the ITO (Section L of the RFP). TO inputs will be prepared by the TO Manager to support and establish standards for evaluation of an offeror's response to the RFP (see chapter 5). Section M informs offerors how the government will evaluate and rank proposals, the relative weights given to various factors, etc. For TOs, a primary criterion is JCALS compatibility, with a preference given to use of Military Performance (MIL-PRF) specifications to achieve it. Other criteria include complete program coverage, acceptable in-house processes to ensure delivery of technically accurate documents and data, past performance and support of government verification. See appendix E for guidance.

4-8 INSTRUCTIONS TO OFFERORS (ITO).

The ITO, Section L of the RFP, identifies how the offerors need to submit their proposals and what they need to cover for the government to evaluate the proposal according to the evaluation criteria in Section M. For example, the ITO may require a tailored TM-86-01, associated SOW tasks, and IMP program event entrance and exit criteria. The ITO essentially addresses topics now contained in TMCR Section 1. Offerors will be required to select and tailor applicable Technical Manual Specifications and Standards (TMSS - listed in the TMCR) for the types of TOs required by the program. See Appendix E for guidance on preparing ITO statements.

4-9 CONTRACT DATA REQUIREMENTS LIST (CDRL) AND DATA ITEM DESCRIPTIONS (DIDS).

4-9.1 All TOs, source data and management data to be delivered by a contractor must be listed on a CDRL (DD Form 1423 - DFARS 215.873(b)). All new CDRLs must have a current DID or the TMCR listed in the "Authority" block (DOD 5010.12-M). The AMSDL (DOD 5010.12-L) lists the DIDs authorized by the Office of Management and Budget for the acquisition of data. TOs may be grouped on one CDRL, grouped by TMCR Table on several CDRLs, or listed by TO type on separate CDRLs. There are two options for the use of CDRLs:

4-9.1.1 The TO Manager may include draft CDRLs for known data requirements in the RFP. The CDRL for TO delivery (if included), with the TMCR attached, will be referenced in RFP section J. The ITO will require the offerors to develop SOW paragraphs, complete CDRL tailoring and submit any other suggested data requirement CDRLs with their proposals.

4-9.1.2 If CDRLs are not included in the RFP, the ITO will require offerors to propose all data requirements, including TOs. In this case, a partly-tailored TMCR may be placed in either the system specification or the Proposal Technical Library.

4-9.2 Offerors must justify each data requirement included in their proposals. The TO Manager or program data manager will complete CDRLs or AF Forms 585 (figure 4-2), for approved requirements. See AFI 60-114 or DOD 5010.12-M for AF Form 585 and DD Form 1423 instructions.

4-10 TECHNICAL MANUAL CONTRACT REQUIREMENTS (TMCR) DOCUMENT, TM-86-01.

A TMCR is used in all contracts for acquisition or modification of systems and equipment when TOs must be developed or updated. It is included in the RFP either as an exhibit, as part of the system performance specification (TRD/SRD), or in the Technical Library, and is referenced in section J. The TO CDRL/TMCR package must be an exhibit with a separately-priced CLIN in the formal contract (DOD 5010.12-M). The latest version of the TMCR, located on the TO System Information Page at World Wide Web address (URL) *http://www.pdsm.wpafb.af.mil/toprac/to-syste.htm* (click on "TO Acquisition Tools"), must be used for all new contracts. Use of a TMCR for stand-alone TO maintenance or system sustainment contracts is optional; then requirements would be covered in the SOW or ITO.

4-10.1 The TMCR consists of three sections; TO Program Requirements, TM Type and Delivery Requirements, and Specification/Standards Interface Records (SIRs). The first section includes instructions to offerors in performance-based language. The second section includes tables listing TO types and related MIL-PRF TMSS, source data requirements, specific TOs requiring update, and commercial manual requirements; and matrices providing delivery instructions for various phases of the program. Section 3 contains the SIRs for joint-service TMSS with Air Force tailoring specified. The TO Manager should tailor sections 1 and 2 to specify known program TO requirements. The offeror completes the tailoring of these sections to propose the minimum number of TO types required to support the program. The contractor will tailor section 3 to document additional tailoring and options proposed for the joint-service specifications and add SIRS for any AF-only or commercial specifications required in section 2.

4-10.2 Tailoring serves two purposes; to delete requirements excess to program needs, or select options presented within specifications and standards. Tailoring guidance may be provided as part of the RFP's Proposal Technical library. See paragraph 4-12.

4-10.3 Only those TM Type Selection Tables, TM Delivery Requirements Matrices and SIRs applicable to a particular contract are left in the TMCR.

NOTE

Updates to existing TOs and new TOs for existing programs may be acquired in "same style and format" when this is satisfactory to all affected agencies and is cost effective over the program life cycle.

4-11 TO DEVELOPMENT.

4-11.1 TOs and source data must be developed in a format compatible with existing internal information systems to facilitate management, distribution and use (DOD 5000.2-R). For TOs, this system is the JCALS Joint TM System. This should be one of the areas covered by the GCO. Compatibility is ensured by use of approved Document Type Definitions (DTDs) and Formatted Output Specification Instances (FOSIs) (see definitions).

4-11.2 Offerors who propose use of commercial TM specifications in lieu of Air Force MIL-PRF specifications must demonstrate that any DTDs and FOSIs developed are compatible with JCALS. This may be done in coordination with MSG/ILJ, which is the AF approval agency for all non-AF DTDs and FOSIs to be used. Approved offeror-proposed specifications will be added to the TMCR, by contract modification if necessary. EXCEPTION: If TOs are to be maintained by the contractor for the life of the system, electronic development format is not restrained to JCALS compatibility.

4-11.3 The TO Manager will obtain TO numbers from OC-ALC/TILU, through submission of AFMC Forms 203 and 204, Technical Order Numbering, Indexing And Control Record and (Continuation), for the TOs proposed by offerors. See AFMCMAN 21-1 for procedures.

4-12 DELIVERABLES.

Deliverables can include PTOs, formal TOs, source data for TOs, Time Compliance TOs (TCTOs), TO updates, commercial manuals, and reproducible media and/or digital files of any of the preceding. DoD policy is to limit delivery on physical media by contracting for direct on-line access to the offeror's data system (Contractor Integrated Technical Information Services - CITIS), to the maximum extent practicable (DOD 5000.2-R).

4-12.1 TO Managers should contact their staff agencies or MSG/ILJ for assistance in contracting for digital TO data and Interactive Electronic Technical Manuals (IETMs). Specific descriptions of each type of deliverable can be found in TO 00-5-1 or the applicable specification.

4-12.2 The contractor will deliver digital files on-line or on reproduction media as directed by the contract. When the contractor will maintain the TOs, delivery will be Indexed Adobe™ Portable Document Format (IPDF). When TO maintenance will be organic, the delivery will be an SGML-tagged file according to MIL-STD-1840.

4-12.3 The verified, approved file is usually the final delivery for a basic TO, update or TCTO. Document government acceptance and receipt on a DD Form 250, Material Inspection And Receiving Report.

4-13 USE OF TM SPECIFICATIONS AND STANDARDS (TMSS).

4-13.1 Preference shall be given to specifications and standards developed under the Defense Stan dardization Program, DOD 4120.3-M (DOD 5000.2-R). Under Air Force Acquisition Reform policies, TM MIL-PRF specifications with attached DTDs and FOSIs are preferred for TO acquisi tions. When these are not available for a specific type of TO, approval to use other government per formance or non-government (commercial) specifi cations and standards may be requested from MSG/ILJ. The contractor may also suggest or develop commercial substitutes for the approved government TMSS, but their use is subject to Air Force approval. RFPs and contracts must reflect this policy. The TO Manager must refer to the DoD Index of Specifications and Standards (DODISS) to ensure only the latest version MIL-PRFs and MIL-STDs are placed on contract.

4-13.2 Only AF-approved MIL-STDs and MIL-PRFs, listed in the TMCR, should be used for Air Force-programs. Other military services' TMSS which have NOT been adopted for Air Force use, but which otherwise meet Acquisition Reform guidelines, may be used on joint-service programs when they will promote commonality and reduce costs. A program-specific waiver from the AF Specification Improvement Executive (HQ AFMC/EN) and compatibility with JCALS is required.

4-13.3 TO 00-5-1 describes authorization procedures for developing a new **type** of TO (i.e., a new specification) if required by the contract.

4-13.4 When revised specifications applicable to a program are published, the TO Manager must review them for impact to the program and, in conjunction with the contractor, using command and support agencies, determine if a contract change should be initiated to incorporate the changes. Consider factors such as safety, usability, cost and schedule.

4-14 SPECIFICATION / STANDARD TAILORING, INTERPRETATION, DEVIATIONS AND WAIVERS.

4-14.1 Approved MIL-PRFs, MIL-STDs and DIDs may be tailored down (excess requirements deleted), but **no additions** are authorized without written approval from the Preparing Activity (PA), provided according to DOD 4120.3-M. For AF TMSS, the PA is MSG/ILJ. Only formal DID revisions can add requirements to DIDs. Authorized tailoring includes both selecting those options offered in the "Acquisition Requirements" section of many TMSS, and deleting non-applicable requirements.

4-14.2 All TMSS tailoring will be documented in the Specification/Standard Interface Record (SIR) for that MIL-PRF or MIL-STD and included in the TMCR, by contract modification if necessary. The basic TMCR already contains SIRs specifying the AF-only options in joint-service TMSS. The ITO will direct the offeror to finish tailoring the joint-service TMSS, and add SIRs for other TMSS recommended for the program. If revised TMSSs replace those on contract, new SIRs are also required.

4-14.3 Contractors may request clarification of specification requirements or government intent through submission of Specification Interpretation Documents (SIDs - See Appendix E). SID responses which affect the scope of the contract will be documented in the SIR.

4-14.4 Contractors may also request the TO Manager to apply for deviations from or waivers to provisions in TMSS. These requests must include an objective justification and evaluation of the impact on: (1) time and material for the users (operating command and support agencies); (2) life cycle cost of the publication and equipment covered by the publication; (3) acquisition cost; and (4) preparation and/or delivery in digital format. The TO Manager will submit deviations and waiver requests to MSG/ILJ for approval or disapproval. Approved requests will be documented in the applicable SIR.

4-14.5 Copies of SIRs, SIDs and other program documents which could affect TMSS content will be provided to MSG/ILJ for information.

4-15 SOURCE DATA FOR TOS.

The ITO will require the offeror to propose development and delivery of source data when the program affects or is affected by another program's TOs, there are special requirements (paragraph 3-6), or more than one contractor is involved with the program. See chapter 12.

4-16 IDENTIFICATION OF ADDITIONAL CONTRACT TO REQUIREMENTS.

The ITO will require the offeror to propose a method for identifying additional TOs and manuals (those unknown at the time of proposal submission) required for the program. CFAE/CFE Notices (DI-TMSS-80067) or contractor Letters of Recommendation including the same data are the standard methods used.

4-16.1 Notices or letters will be submitted when new support equipment is identified, the maintenance concept changes, equipment is modified or other program changes occur which could affect

TO coverage. The notices (letters) recommend new TOs or commercial manuals; modification and use of existing TOs; or advise that no additional data is required.

4-16.2 The offeror recommendation may include a requirement to supplement commercial manuals to make them suitable for AF use. The TO Manager approves the notices or letters after review of the proposed manual (chapter 6 and MIL-HDBK-1221) and coordination by the using command and assigned Equipment Specialist (ES).

4-16.3 When a recommendation is approved, the TO Manager or responsible ES will initiate AFMC Forms 203, Technical Order Numbering, Indexing And Control Record, and 204, (Continuation) (AFMC-MAN 21-1), to obtain a TO number. The numbering request is submitted to OC-ALC/TILU.

4-17 RIGHTS IN TECHNICAL DATA.

TOs, commercial manuals, and contractor data may be copyrighted and/or contain proprietary data. Commercial manuals must be procured with Unlimited Rights, Government Purpose License Rights, or Limited Rights (see below) using Defense Federal Acquisition Regulation Supplement (DFARS) clauses 252.227-7015. Unless otherwise agreed between the parties, if the manuals were prepared for or acquired by the government pursuant to the contract, the contractor should grant the government a license allowing reproduction, distribution, use and development of derivative works, or to have others do so for the government. (Derivative works are publications such as checklists and workcards developed from one or more basic manuals.) The distribution of the manuals outside the government shall be done strictly in accordance with the contract and applicable regulations (DFARS part 227, etc.). For example, when the government has only limited rights in the data, the license is limited by the definition of limited rights in the DFARS.

4-17.1 Unlimited Rights. Unless other rights as described in 4-17.2 or 4-17.3 below have been agreed to in writing according to DFARS 227.7103-5, the Government shall have unlimited right to use, modify, reproduce, release, perform, display or disclose, in whole or in part, in any manner and for any purpose whatsoever, and to have and permit others to do so, technical data purchased under the terms of the contract.

4-17.2 Government Purpose License Rights. These are rights to use, reproduce, display or disclose technical data, in whole or in part and in any manner, for Government purposes only and to permit others to do so for Government purposes only. Includes purposes of competitive procurement but does not grant to the Government the right to have or permit others to use technical data for commercial purposes.

4-17.3 Limited Rights. Limited rights permit the Government to use, reproduce, display or disclose technical data, in whole or in part, with the express limitation that such technical data shall not, without the permission of the party asserting the limited rights, be released or disclosed in whole or in part outside the Government; used in whole or in part by the Government for manufacture; or used by a party other than the Government, except when:

4-17.3.1 Release, disclosure or use is necessary for emergency repair or overhaul; provided such release, disclosure or use outside the Government shall be made subject to a prohibition against further use, release or disclosure, and the party asserting limited rights is notified by the contracting officer of such release, disclosure or use; or

4-17.3.2 Release or disclosure to a foreign government, that is in the interest of the United States **and** is required for evaluation or informational purposes under conditions of 4-17.3.1 above, except that such release or disclosure may not include detailed manufacturing or process data.

4-17.4 Copyrights. Rights clauses cover the release of data. Copyrights govern the reproduction of data. According to DFARS clause 252.227-7013, any commercial publication TO which carries a copyright shall also contain a Notice of Copyright as prescribed under 17 U.S.C. 401 or 402. This notice shall be placed thereon by the contractor prior to delivery, or should the contractor fail, by the Government.

4-17.5 Digitization. Documents, including commercial manuals, which are authorized for government reproduction may be digitized for reproduction and/or distribution without affecting the authorization. Any supplemental data required to make the manual acceptable for use as a TO may be merged with the basic manual during the digitization process, unless specifically prohibited in a limited rights agreement.

4-18 QUALITY ASSURANCE.

The ITO may require the offeror to include details of their QA process in their proposal, if it has not been previously documented and supported by applicable past performance data or if there is exceptional risk in the program. The process will be evaluated for conformance to accepted commercial standards, such as the ISO 9000 series. The

TO Manager will obtain insight into process operation through participation in the IPT. TOs delivered pursuant to the contract must meet the requirements of chapter 7. Digital data deliveries are inspected and accepted on several levels: 1) physical media, 2) data exchange formats, and 3) data content and format. Contractors must demonstrate the accessability of data using their CITIS service in order to obtain government acceptance of the CITIS agreement. The quality of proposed commercial manuals will be evaluated according to chapter 6.

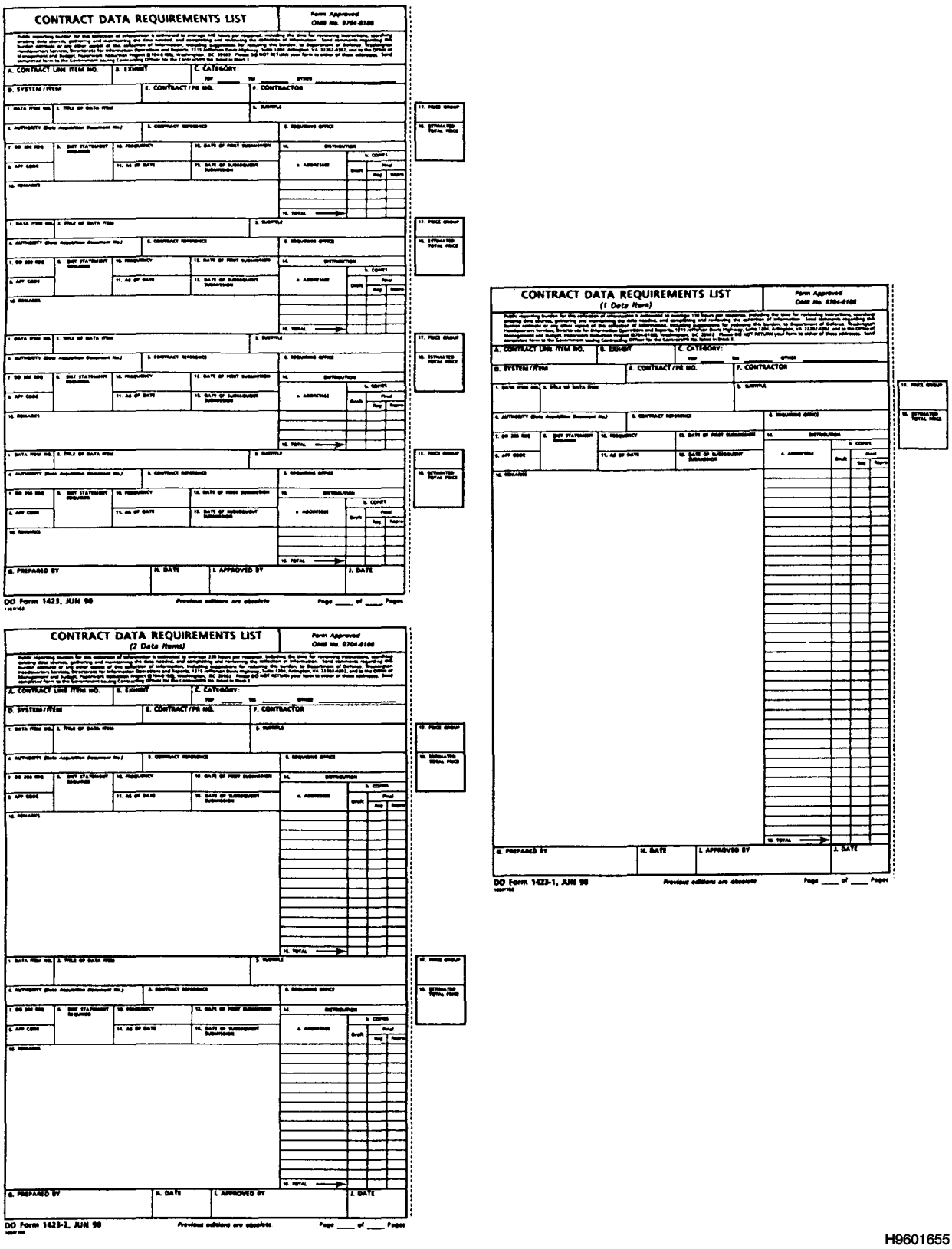

Figure 4-1. DD Forms 1423, 1423-1, and 1423-2, Contract Data Requirements List (CDRL)

CONTRACT DATA REQUIREMENTS SUBSTANTIATION

I. IDENTIFICATION

Contract/PR Number	System/Item

II. DD FORM 1423 ENTRIES

1. Data Item No.	2. Title of Data Item	3. Subtitle

4. Authority *(Data Acquisition Doc. No.)*	5. Contract Reference	6. Requiring Office

7. DD 250 Req	9. Dist Statement Required	10. Frequency	12. Date of First Sub
8. APP Code		11. As of Date	13. Date of Subseq Sub

14. Distribution			
a. Addresses	b. Copies		
	Draft	Final	
		Reg	Repro
15. Total			

16. Remarks

III. JUSTIFICATION/TAILORING/DISPOSITION

17. Justification: *(State How The Data Will Be Used, Who Will Use It and Impact If Not Obtained.*

18. Check Applicable Boxes	Yes	No
Contractor Format Acceptable		
DID Requirements Tailored		
Delivery Can Be Deferred		

19. Requestor Identification

Name:

Organization:

Phone:	DSN:

Date:

20. Data Requirements Review Board Disposition

☐ Approved ☐ Disapproved ☐ Other

Remarks:

Date	Signature

AF Form 585, JUL 91 PREVIOUS EDITIONS ARE OBSOLETE

H9601656

Figure 4-2. AF Form 585, Contractor Data Requirements Substantiation

CHAPTER 5

PROPOSAL EVALUATION AND NEGOTIATION

5-1 GENERAL.

This section provides guidance for TO Manager evaluation of TO acquisition contract cost and delivery proposals, and participation in subsequent negotiations with the offeror, under the direction of the Procuring Contracting Officer (PCO). The TO Manager should be highly trained and experienced in all relevant areas of TO acquisition, and must thoroughly understand program requirements, the RFP, and the evaluation criteria. Assistance and comments should be solicited from appropriate SM or staff agency personnel if some parts of the proposal are beyond the TO Manager's expertise and experience. During competitive contract bidding, the TO Manager must not contact any bidder directly. There must be no bias or any appearance of conflict of interest.

5-2 DEVELOPING EVALUATION CRITERIA AND CHECKLISTS.

Documented criteria must be developed from program requirements prior to RFP release. These evaluation criteria (or a checklist), must be used to analyze any proposals. The criteria should list the requirements in rank order and establish the minimum acceptable level of compliance for a proposal to be considered acceptable, consistent with the evaluation factors. The criteria may be either quantitative or qualitative depending upon the factors or sub-factors they address. The criteria will allow all proposals submitted against an RFP to be evaluated to the same standards and help to prevent any charges of bias or unfair practices. The TO Manager, in conjunction with the IPT (paragraph 3-3.2), will develop TO program evaluation criteria.

5-3 TECHNICAL EVALUATION.

The TO Manager's primary role is evaluating the technical merit of the TO portion of the proposal. Other SM activities will evaluate such items as labor rates, overhead rates, hardware requirements and specifications, and so forth.

5-3.1 The purpose of the TO technical evaluation is to determine whether the offeror's proposal meets the requirements of the RFP, and offeror-proposed hours allocated to TO development are realistic, complete, fair and reasonable in relationship to the RFP. The evaluation should assess the offeror's understanding of and ability to comply with program requirements based on the proposal, Contractor Performance Assessment Reports (CPARs, available from the PCO) or site surveys, interviews, etc. The quality of the contractor's processes and ability to provide an acceptable product are primary concerns.

5-3.2 TO Managers should limit their evaluation to each proposal's compliance with and understanding of RFP provisions and the adequacy and accuracy of individual elements relating to TO development.

5-3.2.1 Whether the proposal is realistic or not is usually assessed by comparing the offeror's proposed effort with similar contracts on other programs, both by the same offeror and by other contractors of similar size and capabilities.

5-3.2.1.1 The elements to be considered for page-oriented TOs include such items as "hours per page" (new and changed), "number of pages" (new and changed), "types of pages" (text, illustration, and mixed), "travel costs" (location, duration, number of people), and hours for TO-related plans and reports.

5-3.2.1.2 Elements to be considered for IETMs will depend on the offeror's units of measurement. Some elements included could be number and complexity of tasks, lines of software code, number, format and complexity of illustrations, etc.

5-3.2.1.3 If the offeror has based the proposal costs for some of these elements on historical data, the TO Manager should evaluate the validity of the data used; i.e., "Is it for a similar effort?," "Is it recent?," "Is it statistically accurate?," "Has any upgrade to the offeror's production equipment been considered?," etc.

5-3.2.1.4 When comparing hours with those proposed by other contractors, the TO Manager must make allowances for different methods of documenting and allocating labor and hours. The TO Manager may want to consult with other SM or staff experts in this area.

5-3.2.2 There are two components of completeness; complete justification of costs and complete coverage of requirements. "Costs" in this instance are primarily labor hours, with the addition of travel, reproduction, and similar dollar costs.

5-3.2.2.1 **Costs** should be fully justified and traceable throughout the proposal. The TO Manager should not be concerned with labor rates (dollars per hour) or any indirect rates (such as "General and Administrative," G&A) or overhead rates (such as material overhead), as these are negotiated separately with the offeror by the PCO. However, the TO Manager should verify that upgrades of the offeror's equipment are reflected in the rates (usually in lower hours per unit of effort and possibly increased overhead).

5-3.2.2.2 The **coverage** of the offeror's proposed effort must be assessed by comparing it with the RFP's scope and effort. During this portion of the evaluation, it may be discovered that the RFP itself is misleading or incomplete, or unneeded requirements have been included. In this case, the TO Manager must notify the PCO so that the offeror(s) have the opportunity to modify their proposals.

5-3.2.3 The TO Manager should provide the PCO with an estimate of the contract's risk (high or low), based on the scope, period, and technical requirements of the RFP. Higher risk technologies would justify higher percentage profits. For example, is the overall program "established" technology or "leading edge" technology? What percentage is new development versus modification or off-the-shelf? How long is the contract period? Are the TOs traditional page-based formats or IETMs?

5-3.2.4 The offeror's ability to comply with program requirements may be assessed by comparing the offeror's proposal with the evaluation factors and criteria (did it indicate a complete understanding of the effort involved), by reviewing the offeror's past performance on similar contracts via CPARs, by site visits, interviews, and other investigation methods.

5-3.3 Reporting the evaluation results is critical. The TO Manager must indicate which portion of the proposal(s) is being evaluated, whether it meets the requirements documented in the RFP, whether the RFP itself has any problems, what must be done to correct any shortfalls, and a risk assessment of the offeror's ability to perform. Accuracy, brevity and clarity are the keys to successfully preparing an evaluation report.

5-3.4 Deficiency Reports (DRs) and Clarification Requests (CRs). During evaluation some aspects or provisions of the proposal may appear deficient or require clarification. If data provided in the proposal fails to address all contract requirements, is inadequate for a proper evaluation or is contradictory, a DR or CR should be submitted through the PCO. DRs and CRs must be specific and limited to the aspect of the offeror's proposal causing the problem.

5-4 CONTRACTOR COSTS.

Costs for TO development fall into two categories, direct and indirect. "Direct" refers to those costs incurred solely as a result of the TO development effort, such as writing, editing, printing, and so forth. "Indirect" refers to costs which would be incurred whether or not TOs were developed, such as company management, facility operation, and the QA program.

5-4.1 Offeror costs to perform TO development support functions, such as attendance at meetings and conferences, verification support, etc. should be included as direct labor costs for producing the TOs or source data.

5-4.2 QA requirements should not be separately priced by the offeror (would be part of "overhead").

5-5 SPECIFIC TO PROPOSAL EVALUATION GUIDELINES.

5-5.1 Not all TOs or source data packages require all support functions, and the offeror proposal should clearly differentiate these items. For example, some commercial manuals do not require supplementing, and the only allowable costs should be for development of an Identifying Technical Publication Sheet (ITPS), annotation of title page data, purchase of multiple copies, and administrative processing of the CFE Notices and manual certification. If task development is performed as part of a Supportability Analysis (when on contract), TOs should not also be charged for task development. When either MIL-STD-863 or MIL-M-83495 is on contract, engineering drawings are usable in TOs without modification except for addition of TO and page numbers. Drawing development is an engineering cost, and the only costs chargeable to TOs are for numbering and reproduction.

NOTE

Not all engineering drawings are usable in TOs.

5-5.2 The TO Manager should estimate page counts (and/or file lengths, database sizes, etc. for digital TOs) by comparing the program to existing programs for similar military systems or commodities when possible. Is the offeror's proposed number of pages in line with this estimation? If TOs are priced individually or by types, compare the number of pages proposed with the number of pages in published TOs of the same type for similar equipment.

5-5.3 If historical data from like systems is not available, the TO Manager should solicit inputs from the SM's ALC technical services function.

5-5.4 Other aspects of the offeror's proposal which must be evaluated include the selection of TO types, development processes, QA processes, proposed formats and methods of delivery, etc. See appendix E.

5-5.5 The TO Manager's evaluation should be based on experience and judgment to the maximum extent possible, using the resources of other TO Managers and the staff when in doubt. When necessary, ask the offeror(s) specific questions regarding their proposal(s), **through the PCO.**

5-6 PROTECTING PROPOSAL RECORDS AND DATA.

The effectiveness and integrity of the contracting process requires that all data and information be handled with the utmost discretion to avoid any compromise. All data and information received or developed during proposal evaluation shall be protected from unauthorized disclosure in accordance with the FAR and AFI 37-131.

5-7 CONTRACT NEGOTIATION.

The TO Manager may be requested to support the PCO during the initial contract negotiation process, particularly if there are disagreements about the TO development portion of the proposal. TO Manager evaluation comments will be discussed, and the TO Manager must document and be prepared to justify the government position.

5-8 POST CONTRACT AWARD.

5-8.1 Negotiations can also occur during the performance of the contract, for ECPs, CCPs, or as a result of differences in contract interpretation. TO Manager participation remains the same whatever the reason for negotiations, and must be performed through the PCO.

5-8.2 Evaluate Engineering Change Proposals (ECPs), associated TCTOs, and Contract Change Proposals (CCPs) against the baseline contract to ensure costs correspond to the original proposal and were not included in the baseline costs. Some TO updates as a result of ECPs should be included in the routine periodic update program, and some proposed additions to the number of TOs developed or acquired may be included in contract baselines. Evaluate the ECPs/CCPs against similar items previously submitted by the contractor.

5-8.3 If, for any reason, the contractor does not perform some functions as originally proposed (for example, when schedules are accelerated and revised need dates prevent some quality checks, or vital support equipment will not be available in time), an equitable adjustment to the contract/order price should be negotiated. The PCO will manage negotiations and may or may not require TO Manager support.

CHAPTER 6

CONFERENCES AND REVIEWS

6-1 GENERAL.

Conferences and reviews conducted by the TO Manager are an essential and formal process, applied within the framework of the TO acquisition management program. Attendance must be limited to the minimum number of personnel required to accomplish the purpose of the conference or review. Personal preference must not affect requirements. After the program contract is signed, any modifications to requirements noted during these conferences and reviews must be documented for PCO action. Minutes of proceedings are not authorization to change contracts.

6-1.1 The TO Manager should be involved in all aspects of the acquisition program, as there are very few areas that will not affect TO and source data development. The TO Manager should participate in such non-TO program meetings as logistics and program management reviews, supportability and provisioning conferences, Preliminary and Critical Design Reviews (PDRs/CDRs), and Support Equipment Recommendation Data (SERD) Reviews.

6-1.2 The TO Manager should be prepared to discuss TO issues at logistics and program management reviews. In addition, the TO Manager must assess and coordinate changes to schedules and availability of equipment to support future TO events.

6-1.3 The TO Manager's role in supportability and provisioning conferences is to evaluate the effects on TO development. At the supportability conference, individual tasks and reports, including the task analysis and tool listings, will be discussed. The TO Manager should assess the availability and contractor use of the supportability records and reports. At the provisioning guidance conference, schedules for Source, Maintenance and Recoverability (SMR) coding will be developed.

6-1.4 PDRs and CDRs address many issues which affect the TOs. Automatic versus manual testing, maintainability requirements, special tools, unique support equipment, and special skills are discussed. It is common for changes to TO procedures, rather than hardware design changes, to be proposed to overcome deficiencies. TOs must NOT be used to compensate for design deficiencies.

6-1.5 Many SERDs will identify support equipment requiring new TOs or additional procedures in existing TOs. The TO Manager must review the SERDs to ensure all TO requirements are identified, and identify the need for CFAE/CFE Notices or contractor Letters of Recommendation.

6-2 TO PLANNING/REQUIREMENTS CONFERENCE.

6-2.1 The TO Manager will conduct a joint TOP/RC with the TO IPT (chapter 3). The TOP/RC will identify TO program requirements, prepare TO program schedules, determine what source data is required to support TO development, and plan for TO verification.

6-2.1.1 The conference may be accomplished through face-to-face meetings, correspondence, telephone or other electronic communication. When the latter options are used, the TO Manager will document all actions and obtain written approval of the final RFP inputs and the TOMP from IPT members. The planning and requirements derived from this conference must follow the established Air Force operation, maintenance and logistics support concepts and plans.

6-2.1.2 When more than one using command is involved, the lead command, as identified in the Program Management Directive (PMD), should be the primary source of requirements information. Requirements from other using commands should also be considered in TO planning efforts.

6-2.2 The conference should plan for the use of existing TOs and commercial manuals whenever possible, identify required new TO types and specifications, and establish program milestones based on the PMD.

6-3 TO GUIDANCE CONFERENCE.

6-3.1 These TO IPT conferences are cochaired by the TO Manager and contractor to ensure understanding of the contract requirements. It is essential that these conferences be held early enough in the development process (normally within 60 days after contract award) to ensure the contractor is not delayed in the start of TO preparation. At this time, the TO Manager clarifies requirements, plans, and schedules and may provide the TOMP to the contractor. Requirements that were not

fully defined or could not be defined until hardware selection and applicable operation and maintenance concepts had been analyzed will be finalized during the TO Guidance Conference.

6-3.2 Guidance Conference objectives are to clarify TO tasks and planning data resulting from contract and program requirements. Participants will review the military system or commodity support plan, Air Force operation and maintenance concepts, Air Force TO policy and intended user capabilities, needs or environment. When required, the TO Manager will provide specification interpretation and comments on contractor plans and schedules presented as part of the proposal. Specific agenda items should be coordinated well before the conference to ensure maximum utility and productivity.

6-3.2.1 The TO Manager will present a briefing establishing the purpose, objectives, scope and functions of the conference. Specific agenda items should include: a review of the contract to ensure mutual understanding of the requirements; a review of applicable specifications and established Air Force TO policy; a review of basic planning data to ensure mutual understanding of the program and intended users requirements; and establishment of contacts to provide subsequent guidance and information.

6-3.2.2 The results of the conference will be fully documented by minutes. The TO Manager will approve the minutes and summarize conference findings and action items, prior to completion of the conference.

6-3.3 Participation. In addition to agencies listed above, participation should include local Defense Contract Management District (DCMD) or Defense Plant Representative Office (DPRO) personnel. Air Force attendees should be officers and/or 7/9-level enlisted personnel, or the civilian equivalents. AF attendees should be familiar with Air Force and major command (MAJCOM) TO acquisition and system support policies. All participants should understand applicable MIL-PRFs, publications, functions, and contract requirements. Conference members must have the authority to make rapid, objective and logical decisions based on contract requirements and Air Force and MAJCOM policies.

6-4 COMMERCIAL MANUAL REVIEW.

Commercial manual review is an integral part of the acquisition QA process.

6-4.1 The contract should require the contractor to provide an evaluation of any commercial manuals they recommend for program support. The evaluation must indicate if the manuals will require supplementing and if they have previously been approved for government use.

6-4.2 MIL-HDBK-1221 contains review requirements used to determine the acceptability of Commercial Off-the-Shelf (COTS) and other commercial manuals. MIL-HDBK-1221 is NOT meant for development of manuals and must not be used to order preparation of TOs for Air Force use.

6-4.3 The using command and assigned equipment specialist perform a commercial manual review, even for those COTS manuals previously approved. The review ensures they accurately cover the equipment and are acceptable according to MIL-HDBK-1221. COTS manuals to support depot operations will be reviewed for acceptability by depot maintenance personnel. Acceptable COTS manuals will be assigned a TO number, controlled and distributed according to TOs 00-5-1 and 00-5-2.

6-5 IN-PROCESS REVIEWS.

6-5.1 The contractor will recommend the frequency and percentage of IPRs needed for TO development insight. IPRs are an essential part of the TO QA process. IPRs are scheduled by the contractor in coordination with the TO Manager and are conducted by the TO IPT. IPRs ensure compatibility with engineering source materials, accuracy of descriptive data, and that TO content, style and format are in accordance with applicable specifications and other contractual requirements. In addition, they are an opportunity for the IPT to identify issues concerning depth of coverage, missing data, data that needs amplification, etc.

6-5.2 As a general rule, IPRs should be accomplished when the TOs are 30-40 percent and 70-80 percent complete. Table 6-1 is a guide to help determine TO completion percentages. In some cases (e.g., nuclear weapons TOs, certain critical procedures, etc.), a 100 percent IPR may be required. If initial IPRs indicate that the contractor understands the requirements and is producing a quality product, the contract may be modified to reduce the numbers of additional IPRs.

6-5.3 For earlier IPRs, the primary focus should be on style, format, and planned depth of coverage. Attendees should be E6-E9 military personnel or civilian equivalent, with knowledge of TO style and format requirements, parent organization policies, and signature authority for their organizations. For later IPRs, the focus shifts to the technical content and comprehensibility of the manual, and personnel should also include technicians of the lowest skill level (5-level minimum) expected to operate or maintain the commodity in the field.

6-5.4 For non-procedural data, verification by Desk-Top Analyses may be accomplished during the IPR. A separate verification is not required, unless the IPR was waived or the procedures were incomplete at the time of the IPR. Table 6-2 is a suggested guide to reviewing TOs.

6-5.5 Interactive Electronic Technical Manuals (IETMs) and Other Digital TOs. IETMs, being relational databases, may have to be continuously under review. The TO IPT will probably view selected tasks and data files and make appropriate comments and corrections electronically. Digital TOs may be reviewed "on-line." The IPR method will be documented in the TOMP.

6-6 PRE-PUBLICATION REVIEWS.

Pre-publication (pre-pub) reviews are scheduled and conducted by the TO Manager, as called for in the IMP. Pre-pub reviews are an examination of TO reproducible copy prior to preparation of reproduction media to ensure incorporation of changes resulting from verification, and as a final check on contract compliance. However, pre-pubs are not required in every case; the TO Manager decides if one is needed on a TO-by-TO basis, depending on number and complexity of changes from verification (IMP entry criterion - appendix E), contractor performance on updating previous TOs, etc. Every effort should be made to include verification team members (chapter 7) at pre-pub reviews to enhance continuity.

Table 6-1. IPR Completion Percentage Guide.

The following general guidelines may be used to determine readiness for IPRs. Percentages of 35 and 75 were used to develop the suggested guidelines. In general, the percentage of completion reflects the manner in which TOs are prepared, not the order of preparation. The items and percentages are suggestions only and are not all-inclusive.

In-Process Review Level:	35%	75%
TO Section	Percent Complete	
TO Title Page	100%	-
Front Matter	-	75%
Introduction	100%	-
General Information	50%	90%
Installation Instructions	25%	70%
Operation Instructions	25%	70%
Theory of Operation	50%	100%
Maintenance Instructions	25%	75%
Checkout and Troubleshooting	-	75%
Circuit Diagrams/Illustrations	25%	75%
Parts Lists	35%	80%

Table 6-2. Review Evaluation Guide.

		YES/NO/N/A/COMMENT
1.	Official part number and nomenclature used on title page to identify the equipment covered in the TOs. (MIL-STD-38784)	
2.	Distribution, Disclosure, Destruction, and Export Control Notices properly applied. (MIL-STD-38784)	
3.	Security classification markings properly applied. (DOD 5200.1-R/AFI 31-401)	
4.	Proper inclusion of table of contents, list of tables, list of illustrations and indices, as required. (MIL-STD-38784)	
5.	TO arranged IAW specifications. (Performance Specification)	
6.	Purpose of TO clearly stated. (MIL-STD-38784)	
7.	Use of TO identified. (MIL-STD-38784)	
8.	Scope of TO outlined. (MIL-STD-38784)	
9.	Inclusion of a listing of ECPs, TCTOs and configuration changes to properly update TO, if applicable. (Performance Specification)	
10.	Applicable safety precautions included. (MIL-STD-38784)	
11.	Notes, cautions and warnings prepared and used properly and consistently. (MIL-STD-38784)	
12.	All abbreviations and technical terms fully explained and identified as required. (MIL-STD-38784)	
13.	Nomenclature consistent within and between related publications. (MIL-STD-38784)	
14.	Materials referred to using approved Government or commercial specifications and standards where applicable. (MIL-STD-38784)	
15.	Materials used and methods for use of materials comply with AF regulations especially as to effects on health and the environment. (AFOSH STDs and AFI 32-70xx series)	
16.	Theory covered only to the extent necessary. (MIL-STD-38784)	
17.	Complete troubleshooting procedures and corrective procedures presented in a clearly understandable and usable form. (MIL-STD-38784)	

Table 6-2. Review Evaluation Guide (Continued).

		YES/NO/N/A/COMMENT
18.	Maintenance schedules (inspections) covered, if applicable. (MIL-PRF specification)	
19.	Special Maintenance that may be required in unusual climactic conditions of cold, heat, wind, altitude and noise included, if applicable. (MIL-PRF specification)	
20.	Maintenance concepts and using personnel skill levels align with maintenance procedures. (TO 00-5-1)	
21.	Calibration instructions accurate and clearly defined. (MIL-PRF specification)	
22.	Dial, meter and switch settings given at the beginning of each operation, if required. (MIL-STD-38784)	
23.	Data flow in a logical order IAW use or repair of the equipment. (MIL-STD-38784)	
24.	Standard test equipment and special tools to be used for job performance listed. (MIL-STD-38784)	
25.	Text supported properly with necessary illustrations, charts and tables. (MIL-STD-38784)	
26.	Drawings properly prepared. (MIL-STD-38784)	
27.	Glossary, if required, is adequate in scope. (MIL-STD-38784)	
28.	Certification forms reviewed to insure that verification was satisfactory and equipment can be operated, tested and maintained with the written procedure. (TO 00-5-3)	
29.	Coverage compatible with other TOs, including IPB. (MIL-STD-38784)	
30.	Written not to exceed the 9th Reading Grade Level (RGL). (MIL-STD-38784)	
31.	Short sentences used in preference to long, complex sentences. (MIL-STD-38784)	
32.	Adequate use of necessary cross-references to other chapters, sections, volumes, etc. (MIL-STD-38784)	
33.	No unnecessary duplication of textual material, procedures, routines, diagrams, etc. (MIL-STD-38784)	
34.	Prescribed forms/formats have been discussed with forms management personnel. (AFI 37-160V8)	

CHAPTER 7

QUALITY ASSURANCE

7-1 GENERAL.

TO Quality Assurance (QA) is the joint responsibility of the contractor and the government. It is achieved by establishing process controls during TO development, followed by an in-depth testing process to ensure the intended user can perform the TO procedures according to established maintenance and operational concepts.

7-1.1 The development process controls are based on using the Integrated Product Team (IPT) concept (chapter 3) to manage and control activities. The controls include such events as Guidance Conferences, In-Process Reviews and Pre-Pub Reviews (chapter 6), and application of the contractor's internal QA process.

7-1.2 The government's in-depth testing process is called verification, and is designed to ensure that the intended TO users can effectively use the TO to carry out their assigned functions. This could include the interface between different systems and other TOs and procedures, ability to locate required data, ease of troubleshooting, etc.

7-2 READING GRADE LEVEL (RGL).

7-2.1 RGL computations may be computer-generated or performed manually using any accepted computation procedure. This performance characteristic of the TO is captured in MIL-STD-38784.

7-2.2 Initial RGL computation should be done by the contractor during TO development. Computations will be reviewed during IPRs.

7-2.3 When a TO is developed organically or when updates meet the criteria specified in AFMCMAN 21-1, government personnel will check RGL using the AFTO Form 124, Computation Of Technical Order Reading Grade Level (figure 7-1). A copy of the AFTO Form 124 will be included in the TO documentation package for each TO maintained by the TO Manager.

7-3 THE CONTRACTOR QA PROCESS.

The contractor's QA process may be detailed in the proposal submitted in response to the RFP. The proposed process may be modified if necessary during contract negotiations, and when approved, becomes part of the final contract. The decision to place the process on contract is made by the government IPT based on assessed risk, including contractor's past performance and existing TO QA procedures. Approved QA requirements must also be applied to any products or processes supplied by vendors or sub-contractors.

7-3.1 Prior to Acquisition Reform, contractor QA was to a large extent dictated by the government. In addition to the contractually-required conferences and reviews, Contractors were required to "Validate" all technical documentation and data through the actual performance of operational and maintenance tasks on a production-configured unit, and through Desk-Top Analysis for non-procedural data. Validation was done under the direct observation of a government "witness."

7-3.2 In the period immediately preceding Acquisition Reform, several policy changes relaxed the "100%" requirement for validation and witnessing. It was recognized that witnesses couldn't always be provided, that there were times when it made good economic sense to combine government and contractor testing (combined val/ver), and finally, that an experienced contractor might be able to develop TOs without requiring 100% validation of all data (certification).

7-3.3 Under Acquisition Reform, the contractor is responsible for the end result of the TO development process; that is, for **adequate, safe** and **accurate** TOs which **conform** to government requirements. The data must be fully **compatible in depth and scope** with the established maintenance concept and the approved logistics support plan. The data must be **checked** for **security classification, distribution restrictions, and RGL.** The contractor might use any or all of the previously mentioned procedures as part of the TO QA management process.

7-3.4 When the proposed QA process includes task performance, the following guidance should be followed:

7-3.4.1 Nondestructive malfunctions may be introduced for the purpose of checking procedural and fault isolation tasks or systems tests. Procedures which could cause damage to the hardware or injury to personnel should be simulated.

7-3.4.2 Only support equipment listed in the TO should be used in testing procedures. The TO Manager should be consulted if substitution of support equipment is required. The contractor

must identify and request any Government Furnished Equipment (GFE) required to support the TO development effort. The TO Manager will coordinate with applicable program managers if necessary to provide GFE and ensure it will be available to support the weapon system or commodity in the operational environment.

7-3.4.3 Locally fabricated tools or test equipment listed in the TO should be used during testing. Procedures for fabricating these items will be included in the TOs.

7-3.4.4 Tasks will normally be performed at the contractor's facility during system or commodity development testing. If required GFE is not available, tasks may be performed at an operational or test site when approved by the procuring activity. The contractor will coordinate requirements with any affected agencies.

7-3.4.5 When the contractor cannot perform some tasks due to non-availability of GFE resources, the TO Manager shall be notified. The TO Manager may provide the required resources (if available) to the contractor or suggest use of a field location. In some cases, combining contractor QA with AF verification (paragraph 7-4.11) may be authorized. As a last resort, the TO Manager may authorize use of simulation or desk-top analysis of the procedures.

7-3.4.6 Task performance or simulation may be unnecessary for existing manuals and source data if they apply to the current configuration of the equipment, and are current, adequate, accurate and conform to contract requirements.

7-3.4.7 QA requirements for Category 11N nuclear weapons TOs are in TO 11N-1-1. EOD source data procedures only require contractor desk-top analysis; the government will perform any procedures requiring verification.

7-4 VERIFICATION.

Verification is the formal process by which Air Force personnel evaluate and prove TOs are accurate, adequate, safe, and usable in the operational environment to support the program's O&M concepts. All technical data should be verified. Technical data for Contractor Logistics Support programs need not be verified unless it will be used by government personnel.

7-4.1 Verification of TOs should be completed in sufficient time to permit correction, publication, and distribution of formal TOs to field operations prior to or concurrent with delivery of the hardware and software they support. Procedures to be followed when this is not possible include recommending use of Interim Contractor Support or obtaining waivers to use PTOs until verification can be completed.

7-4.2 The TO Manager, in coordination with the using command, may issue a waiver to distribute PTOs to operational units for verification using production equipment. The maximum duration of the waiver is 120 work-days after receipt of all assets (TOs, production hardware, support equipment and supplies). Extension requests must be reviewed by the using command, and be approved by the SM. Operational unit verification must be tightly scheduled to present minimal disruption to mission schedules. This schedule must be coordinated with and approved by the using command and SM, and must be included in the TOVP.

7-4.3 The inability to verify certain specific maintenance procedures, such as aircraft wing or missile canister removal and replacement should not delay formalization and distribution of TOs. If a partly-verified TO is issued, it will include a Verification Status Page (VSP), and the first field unit required to use an unverified procedure will perform verification according to TO 00-5-1. Other reasons for issuing partly verified TOs include lack of equipment or other required support to perform verification or the destructive nature of the procedures.

7-4.4 Verification is accomplished in accordance with the TOVP (paragraph 3-4.4 and Appendix C), using PTOs provided by the contractor. The TO Manager is responsible for keeping the TOVP updated and coordinated throughout the verification effort.

7-4.5 Participation in verification efforts by using command and other affected agency personnel is critical to the development of TOs. Verification activities will not be halted due to lack of attendance by other support agency personnel.

7-4.6 Contractor support for the verification effort should be part of every contract for the development of TOs. The support usually consists of a writer and/or engineer. This support is required to minimize delays caused by faulty procedures, lack of spare parts, etc.

7-4.7 The TO Manager, with approval of the SM, using command and other affected agencies, may waive verification. Verification by performance may be waived when procedures are similar to other, previously-verified procedures on like equipment.

7-4.8 The TO Manager or Verification Team Manager (VTM) may authorize the use of substitute equipment, facilities, or draft procedures. This authorization may be given when the required items are not available and there will be

no appreciable difference in procedures. Any such substitution must be coordinated and documented in the verification minutes.

7-4.9 Both the technicians for the verification team and the site for verification are normally provided by the using command. The selection of qualified using command personnel to perform verification depends on the type and level of maintenance established for the military system or commodity being covered. Different teams and verification locations may be required to cover all maintenance types and levels (on- or off-equipment, field or depot) for TO verification. The verification team will normally consist of the VTM, technicians, QA and Safety personnel, other support agency personnel, and the contractor. The technicians should include the lowest grade and skill level projected for day-to-day use of the TO.

7-4.10 The verification schedule must be prioritized based on critical operational and maintenance tasks that affect safety, operational readiness and supportability of the system and commodity during initial deployment. Personnel, hardware, consumables and support equipment will be scheduled to ensure they are available for each verification effort.

7-4.10.1 First priority for verification are organizational-level operation and maintenance procedures. Within this grouping, procedures are further prioritized as follows:

- Pilots and/or Operators Manuals.
- All Safety of Flight and Operations procedures.
- All Critical Safety precautions.
- All TOs required for Nuclear and/or Flight Certification.
- Day-to-day maintenance and operational tasks in O&M TOs and checklists. All newly-developed Contractor Furnished Equipment (CFE) TOs used in support of the above TOs and procedures.
- All remaining TOs and procedures.

7-4.10.2 Second priority are intermediate and depot level maintenance procedures. Depot TO verification should be performed in conjunction with depot prototype overhaul certification to the maximum extent possible. This will ensure that test equipment, software and TOs are compatible, and will reduce the overall cost of the program.

7-4.11 Combining Contractor QA and Verification. Contractor and Air Force QA programs may be combined when the following conditions exist and the option is approved by the SM and using command:

NOTE

Before joint performance of procedures, the question of liability for damage to equipment or injury to personnel should be resolved between the contractor and the government. The government position should be that the contractor is responsible for any damages or injuries caused by following faulty procedures. During the combined effort, a negotiation process should be established to resolve and document any disputes over liability. If necessary, request assistance from the Contract Law Office.

7-4.11.1 A negotiated liability clause must be established prior to any combined QA effort.

7-4.11.2 Tasks should be reviewed for the complexity and hazardous nature of the procedures. Highly complex or hazardous procedures should be QA'd by the contractor prior to delivery for verification. Each case must be evaluated and agreed upon by the SM and using command.

7-4.11.3 Using command personnel will perform the TO procedures with the guidance and assistance of contractor technicians.

7-4.11.4 The procedures must be in final deliverable format.

7-4.12 Explosive Ordnance Disposal TMs. Category 60 Joint Service EOD publications for US nonnuclear and foreign explosive ordnance are developed by the NAVEODTECHDIV. They will be accepted as valid for Air Force use upon completion of verification and indexing (indicating acceptance by the Military Technical Acceptance Board). Det 63, AAC/CC, manages Air Force participation in the verification program for EOD publications. Whenever possible, routine munitions disposal procedures developed for inclusion in TO 11A-1-42 will be verified concurrently with the EOD procedures.

7-4.13 Nuclear Weapons TOs. Any TM issued under JNWPS will be verified according to TO 11N-1-1. The appropriate TCM from the Weapons Directorate, SA-ALC/NW (paragraph 2-9), must participate in the verification.

7-4.14 Non-Nuclear Munitions and Explosives TOs. The USAF Ammunition Control Point (OO-

ALC/LIW) must participate in verification of procedures involving nonnuclear munitions and explosives components. The Tactical Missile Control Point (WR-ALC/LKG) must participate in verification of air-launched tactical missile system TOs (except AGM-65 Maverick, which falls under OO-ALC/LIW).

7-4.15 COTS publications and those O&M TOs and source data specifically approved by the TO Manager are exempt from verification by performance.

7-5 VERIFICATION METHODOLOGY.

Verification can take any one or a combination of three acceptable methodologies for accomplishment, depending on the type of equipment or instructions being verified.

7-5.1 Performance. Actual performance on production-configured hardware or government-approved inert versions (for explosive items) is the only acceptable means to verify certain tasks. Tasks to be verified by performance include but are not limited to all operating and maintenance procedures.

7-5.2 Simulation. In some instances, actual "hands on" demonstration of procedures duplicates similar tasks already demonstrated, needlessly subjects equipment to damage, activates "one-time" items such as Electro-Explosive Devices (EEDs) or exposes the technician to personal injury. In these cases, the procedures may be simulated by observing the equipment in its operational configuration while studying the task to ensure that it is logical, effectively descriptive and can be accomplished.

7-5.3 Desk-Top Analysis. When the TO Manager waives verification by performance on procedural data, it will be "desk-topped" for accuracy against current source data. Non-procedural data is usually reviewed and approved during IPRs (chapter 6); when an IPR is waived, a separate verification is required.

7-6 VERIFICATION PROCEDURES.

7-6.1 Verification Site. The site selected for any particular verification effort will be jointly determined by the TO Manager and MAJCOM, based on the availability of support functions, the type of procedure being verified, the level of maintenance, etc. The site should provide facilities as similar as possible to the operational locations where the TO procedures will be used.

7-6.2 Verification Team Manager (VTM). The TO Manager will act as or request the MAJCOM to appoint a VTM to control verification. The VTM will coordinate with all affected agencies to ensure the availability of facilities, equipment and personnel to conduct the verification. When the data or procedures are delivered and all required hardware, support equipment, personnel, supplies and data are available, the VTM will schedule and supervise the verification effort, including pre- and post-verification meetings.

7-6.3 The VTM will conduct a pre-verification meeting with the verification team to ensure team members are aware of their responsibilities and duties. Subjects to be covered during the meeting include the maintenance concept, any reference documentation available, the specific TOs and procedures to be verified, safety precautions, documentation required and individual team member assignments. Team members will review the procedures prior to beginning any task verification.

7-6.4 The VTM will supervise the actual verification effort. The VTM will make every effort to resolve problems on-site to prevent delaying or canceling verification. Checklists will be verified simultaneously with the parent manual. A separate AFTO Form 27 will be completed on each TO or portion of a TO and checklist verified to document discrepancies and the overall results of the verification. Specific verification tasks include:

7-6.4.1 Performing the procedures to verify that they are usable by personnel with the planned skills and training. Reviewing the arrangement of material and method of presentation support the operations or maintenance concept.

7-6.4.2 Observing and reporting any safety violations or hazardous conditions. STOP operations if necessary.

7-6.4.3 Performing TO RGL computations (paragraph 7-2).

7-6.4.4 Ensuring all actions and suggested or required TO changes are fully documented (paragraph 7-6.8).

7-6.5 The TO Manager must ensure updates are accomplished on a timely basis. (Updates should be restricted to those of a technical nature affecting operation and maintenance procedures. Editorial changes will be restricted to those affecting comprehensibility.)

7-6.6 The VTM will conduct a post-verification meeting to resolve any problems, generate the minutes, and assign action items as required. VSPs will be updated as required. The Verification Record section of an AFTO Form 27 will be used to document any discrepancies found in the TO or procedures during verification, and recommend either further verification or formalization of the TO. The form will be submitted to the TO Manager (or TORB/ FTORB - see below)

for approval. When approved by the TO Manager, the AFTO Form 27 recommending formalization will be used as authority to prepare the formal TO.

7-6.7 All comments and changes developed as a result of verification must be approved by a review panel, normally a TO Review Board (TORB) or Flight TORB (FTORB), prior to incorporation in the TO. This review panel should consist of personnel from activities involved in the acquisition or modification program, as determined by the TO Manager, including verification team members and the contractor. The flight manual review panel must include at least three rated officers. After review, coordination and approval, the changes will be sent to the contractor for update of the TO involved, and if verification was completed successfully, preparation of the formal manual.

7-6.8 Documentation. Each verification effort requires complete documentation, including minutes, AFTO Forms 27, AFTO Form 124, and AFTO Forms 158 (TO Review Comment Sheet, figure 9-2), AFTO Forms 22 or AF Forms 847, as applicable. For concurrent contractor/government testing, contractor records will be included with verification documentation. The TO Manager will maintain a file of all verification documentation issued for the life of the TO covered, according to AFMAN 37-139.

COMPUTATION OF TECHNICAL ORDER READING GRADE LEVEL

1. T.O. TITLE	2. T.O. NUMBER
	3. T.O. DATE
4. NUMBER OF PAGES OF TEXT IN T.O.	7. T.O. MANAGER /OFFICE SYMBOL
5. READING GRADE LEVEL IAW MIL-M-38784	
6. COMPUTED OVERALL GRADE LEVEL OF T.O.	

8. TO COMPUTE READING GRADE LEVEL (RGL) OF T.O.. USE "READABILITY" CRITERIA PRESCRIBED BY MIL-M-38784 OR RECORD THE COMPUTER-DERIVED RGL WHEN AVAILABLE.

SAMPLE NUMBER A	PAGE NUMBER OF SAMPLE B	NUMBER OF WORDS IN SAMPLE C	NUMBER OF SENTENCES IN SAMPLE D	NUMBER OF SYLLABLES IN SAMPLE E	SAMPLE GRADE LEVEL F

9. PROJECT OFFICER	GRADE	OFFICE SYMBOL	PHONE
10. SIGNATURE			DATE

AFTO FORM 124, SEP 93 PREVIOUS EDITION IS OBSOLETE

H9601657

Figure 7-1. AFTO Form 124, Computation of Technical Order Reading Grade Level

CHAPTER 8

REPRODUCTION AND DISTRIBUTION

8-1 REPRODUCTION.

The TO Manager arranges for reproduction and distribution of PTOs to support acquisition activities. Government reproduction of formal TOs and source data is arranged with the Defense Automated Printing Service (DAPS). Distribution of formal TOs may be arranged through the DAPS or the ALC. Reproduction will be in accordance with DODD 5330.3/AF Supplement.

8-1.1 Reproduction methods include numerous forms of printing (for "hard" copies) and electronic (digital) duplication/transmittal (for digital reproduction masters and new generation electronic TOs).

8-1.2 Quantities of preliminary TOs are determined by the TO Manager based on program requirements (paragraph 8-2.1). Quantities of formal TOs are based on justified orders placed by users according to TO 00-5-2.

8-1.3 Reproduction Media. If the TO is to be reproduced from paper or negative masters under an existing contract, TO Managers will contract for reproducible direct image copy (DIC). (The GPO will shoot any negatives required.) For new contracts, reproduction media will consist of the digital files generated during TO development, in either Indexed Adobe™ Portable Document Format (IPDF), a similar printable page description language, or SGML-tagged format (see paragraph 4-10). SGML files will only be delivered after implementation of JCALS at the ALCs. Manual sizes, use of color and line versus half-tone art, type of paper used and similar details are specified in MIL-STD-38784 and the MIL-PRFs.

8-1.4 Printing. The government has placed a statutory limit (number of page units x number of copies ≤ 25,000 units) on the size of a print order which can be performed outside of Government Printing Office (GPO) channels. It is DOD policy to arrange for GPO printing contracts through the DAPS. For quantities less than the statutory limit, printing may be done "in-house" by the DAPS or the contractor.

8-1.4.1 When it is more cost-effective, the TO Manager may contract directly with the GPO for printing. This procedure will be implemented on a case-by-case basis through an MOA with DAPS. The TO Manager is responsible for budgeting for TO printing.

8-1.4.2 The new-program-start TO Manager must request DAPS printing support at least 180 days prior to the desired initial TO publication date. Contact HQ AFMC/SCDP for additional assistance. DAPS determines whether in-house resources or GPO printing support will be used. DAPS will estimate program printing costs, and the TO Manager will provide funding using a Military Interdepartmental Purchase Request (MIPR) or equivalent. DAPS will arrange printing programs (contracts) with the GPO if required.

8-1.4.3 The TO Manager, in coordination with DAPS, will identify an administrative support agency (ASA) for preparing and processing print packages and DAPS will arrange for any necessary training. A print package includes the reproducible media, AFTO Form 30, Reproduction Assembly Sheet (figure 8-1), GPO Form 2511 (Print Order), and if applicable, a deck of mailing labels. (The local DAPS may specify other equivalent forms.) Possible ASAs are:

- SM/TOCU in-plant personnel
- DCMD/DPRO support via MOA
- Other DoD agencies
- Local/regional printing specialists
- Contractors

8-1.4.4 The TO Manager, in coordination with DAPS, determines procedures for release of reproduction masters; requesting decks of mailing labels (if applicable) and/or quantitative requirements from the responsible ALC (for formal TOs); preparation and shipment of the print package, and disposition of the reproduction masters and TO backup stock.

8-1.4.5 Following acceptance of the reproduction master by the Administrative Contracting Officer (ACO), it is packaged and forwarded as determined above.

8-1.4.6 If distribution will be performed by the printer, the TO Manager or ASA will request the TO Management system to print a deck of mailing labels, not less than 10 days prior to submittal of the print package. Off-line users will submit the

request via AFMC Form 632, TO Distribution and Record Request (figure 8-2).

8-1.4.7 The DAPS provides the designated ASA with the appropriate in-house or GPO printer address and processing instructions.

8-1.4.8 The GPO completes the preparation of the print order, prepares a firm estimate, and returns a copy of the print order to the activity responsible for monitoring obligated funds. The printer prints and ships the TOs. If distribution to users is requested, it will be accomplished according to the mailing labels provided. Backup stock and reproduction masters are shipped as instructed on the print order. Subsequent distribution (for replenishment, new requirements, etc.) is handled through the G022 System. The printer furnishes a Certificate of Conformance and bills the GPO. The DAPS will debit the TO Manager's printing account.

8-1.4.9 Hard copy TOs may be printed on paper or reproduced on microfilm or microfiche. The responsible ALC will coordinate with the TO Manager if microfilm or microfiche is to be used. The TO Manager should report any printing errors to the DAPS within 30 days of TO receipt. HQ AFMC/SCP will provide needed support when errors cannot be resolved.

8-1.5 Quality Assurance. Printing jobs are inspected by the printer prior to shipment. However, the TO Manager should request that the DAPS/GPO Print Order require the printer to seal a random sample of the backup stock in a "blue-label box". The sealed blue-label box will be shipped to the warehouse with the rest of the stock. This sample will provide justification for recourse against the printer. It will be opened by DAPS/GPO only if there are reports of printing errors. The blue box will be the LAST one used by the warehouse to fill follow-on distribution requirements.

8-1.6 Printing Contract Maintenance. Approximately three months prior to expiration of a GPO printing contract, DAPS requests the TO Manager to review and revalidate requirements. The TO Manager will review the contract specifications and request contract renewal (with or without modification) or allow the contract to lapse if no longer required. If for any reason, the GPO contract must be canceled or changed (for example, if the program is canceled) the TO Manager must go through DAPS to effect the change.

8-1.7 Electronic Media. Publishing may include reproduction of digital files on floppy disc, Compact Disk-Read Only Memory (CD-ROM) or other electronic media. See TO 00-5-1 for digital TO formats. Electronic media will be numbered, ordered and distributed like paper TOs. Electronic (on-line) distribution will be over weapons system peculiar wide area networks, the World Wide Web or through the JCALS infrastructure.

8-1.8 Storage Requirements. The TO Manager will provide estimates on ID and storage requirements (number of TOs, pages/disks, and copies) to the ALC storage facility manager as early as possible in the acquisition program, but not later than one year prior to formalizing the TOs. This will provide sufficient time for the ALCs to arrange for TO storage facilities and staffing. As JCALS is implemented, new procedures for "print-on-demand," digital media storage, and electronic storage will reduce (but not eliminate) the requirements for hard-copy TO storage space.

8-2 DISTRIBUTION.

8-2.1 Preliminary TOs are distributed by the contractor to support IPRs, verification, and prepublication reviews according to the tables in Section 2 of the TMCR. Distribution is limited to the acquisition/review participants.

8-2.2 For PTOs approved for use in the operational environment (chapter 1 and TO 00-5-1), the TO Manager will arrange for printing, storage and distribution; usually through the ASA or a CTOCU/TOCU. For major programs, the prime contract may cover PTO storage and issue.

8-2.3 Formal TOs and updates are distributed according to TO 00-5-2. During acquisition, the TO Manager is responsible for managing the initial distribution using procedures specified in paragraph 8-1.4.6 and 8-1.4.8.

8-2.4 Distribution of both formal and preliminary TOs may be restricted to government agencies, government contractors, or as otherwise specified by the TO Manager in accordance with AFI 61-204 and DOD 5230.24.

REPRODUCTION ASSEMBLY SHEET	DATE	SHEET 1 OF
TITLE/NUMBER AND SECURITY CLASSIFICATION	WORK ORDER NUMBER	

TYPE OF JOB
☐ ORIGINAL ☐ CHANGE ☐ REVISION ☐ SUPPLEMENT ☐ REPRINT

*SYM-BOL	PAGE NO.	FIGURE NO.	HALF-TONE	LINE	STRIP-IN	COLOR	FOLD-OUT			SPECIAL INSTRUCTIONS
							FOLDS	PAGES	BLANKS	
SUB TOTALS										

FINAL CHECK TOTALS ONLY			
TOTAL	BLANK	COLOR	BLACK AND WHITE
STRIP-IN	NEGATIVE ART	HALFTONE	LINE
A FOLD	B FOLD	C FOLD	
2 COLORS	3 COLORS	4 COLORS	5 COLORS

TRIM
☐ 3 SIDES
FOURTH SIDE WILL BE PERFORATED
☐ 4 SIDES

* LETTER IN THIS COLUMN MEANS FOLLOWING
R - REPRODUCIBLE COPY F - FOLDOUT
N - NEGATIVE B - BACKUP
(If all material is same, R or N on top line only is adequate)

ASSEMBLER, + ADDRESS, + PHONE

+ PRINTER WILL USE IF NECESSARY TO CONTACT

AFTO FORM 30, JUL 95 ***(EF-V1)*** *(PerFORM PRO)*

H9601658

Figure 8-1. AFTO Form 30, Reproduction Assembly Sheet (Sheet 1 of 2)

AFTO FORM 30 COMPLETION INSTRUCTIONS

1. Fill out heading information as indicated, leaving "**WORK ORDER NUMBER**" blank.

   NOTE: Enter each page submitted on a separate line. If two or more negatives must be combined ("stripped-in") to make a single page, enter each negative on a separate line.

2. "**SYMBOL**" column: Enter "R" for reproducible copy, "N" for negatives, "F" for foldout pages, or "B" for backup pages.

3. "**PAGE NO.** & **FIGURE NO.**" columns: Enter indicated data.

4. "**HALF-TONE**," "**LINE**," and "**STRIP-IN**" columns: Enter the number of continuous tone images, line drawings, or strip-ins required to finish each page. (TOs normally use only line art, and don't usually require strip-ins except for color.)

5. "**COLOR**" column: Leave blank for black printing; the number of pages in "**BLACK AND WHITE**" (under **FINAL CHECK TOTALS**) will suffice. When printing in two or more colors, black is counted as a color. Use of color printing for TOs is strongly discouraged.

6. "**FOLDOUT**" columns: Enter the number of folds, number of individual printed pages, and number of blank pages as indicated.

7. "**SPECIAL INSTRUCTIONS**" column: Any other information pertaining to printing the publication.

8. "**SUBTOTALS**" row: Enter the total number of pages listed and sums of the numbers in the other open columns.

9. "**FINAL CHECK TOTALS ONLY**" section: On the first page only, enter the sums of the "**SUBTOTALS**" rows for all pages submitted.

10. "**ASSEMBLER, ADDRESS, PHONE**" block: Enter the required information for the point of contact if questions arise about the print order.

Figure 8-1. AFTO Form 30, Reproduction Assembly Sheet (Sheet 2 of 2)

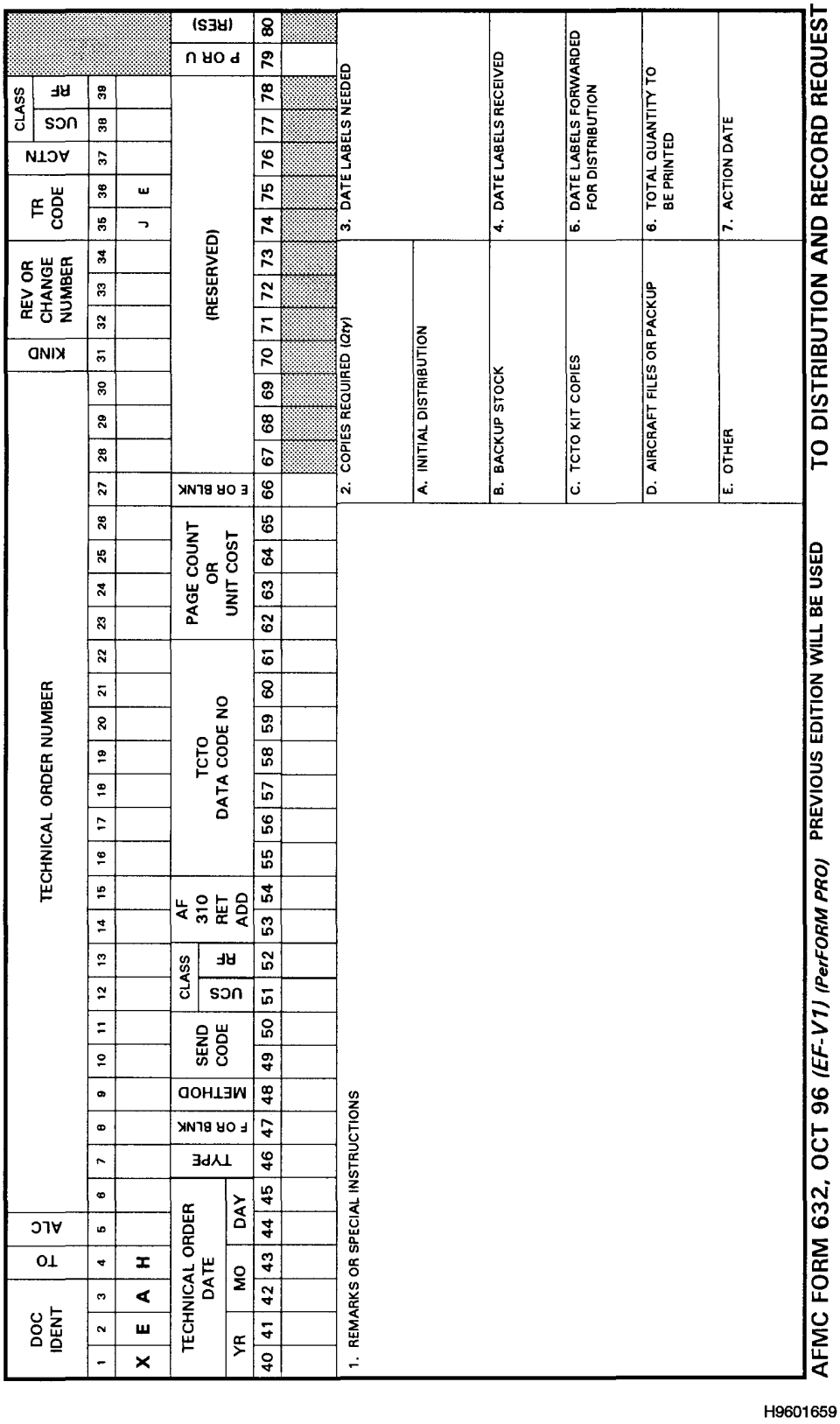

Figure 8-2. AFMC Form 632, TO Distribution and Record Request

CHAPTER 9

TO UPDATES

9-1 GENERAL.

This chapter describes acquisition-phase procedures for updating TOs and PTOs, as well as use of the formal TO Improvement System (TOIS) and AFTO Forms 22 during acquisition. Requirements for updates to formal TOs are in TO 00-5-1. The TO Manager is responsible for ensuring that TOs remain current and accurate throughout the acquisition phase by contracting for TO updates.

9-1.1 The RFP ITO section must address TO maintenance as a requirement of the program. The contractor will propose coverage requirements and update cycles. It is best to contract for TO maintenance in renewable options once the initial TO development contract is completed, to allow the Air Force to select the most economical time to assume the TO maintenance role.

9-1.2 Updates to TOs as a result of an Engineering Change Proposal (ECP) are normally considered to have the same contractual status as the ECP. In other words, if the ECP is in the scope of the contract, so is the TO update; if it is out of scope, the cost for updates to the TOs must be included in the ECP costs.

9-1.3 Update Submittal. Updates are submitted on several different forms, known collectively as publication change requests (PCRs). PCRs for PTOs are generally submitted on AFTO Forms 27 (figure 9-1) or AFTO Forms 158 (figure 9-2) according to procedures specified in the program's TO Management Plan. The AFTO Form 27 may also be used in lieu of the AF Form 847 for preliminary Flight Manuals Program TOs. The TO Manager may specify use of the AFTO Form 22 for reporting deficiencies on formal TOs and PTOs used by operational units during program acquisition. When using AFTO Forms 22 and AF Forms 847 instead of AFTO Forms 27, they will be routed directly to the TO Manager/Flight Manual Manager or to a (Central) TO Control Unit (CTOCU/TOCU) rather than being entered into the TO Improvement System (TOIS) tracking system. Using the CTOCU/TOCU option will reduce the administrative burden on the TO Manager.

9-1.4 Update Approval and Incorporation. The TO Manager will establish a procedure for evaluating and approving PCRs and document it in the TOMP . The TO Manager must ensure that all involved agencies are made aware of the routing and approval requirements. During acquisition, the Air Force may not have the capability to perform an engineering evaluation of suggested changes; the contractor is often tasked to provide this support. Normally, a TO Review Board (TORB) and Flight TO Review Board (FTORB) are established to review, approve and determine verification requirements for all proposed PTO updates. After updates are approved by the TORB/FTORB, the TO Manager sends them to the contractor for incorporation in the affected TO.

9-1.5 After TOs are formalized, the TOIS will be used.

9-2 TYPES OF UPDATES.

The types of updates used with formal TOs (TO 00-5-1) will also be used with PTOs during acquisition. In addition, an approved AFTO Form 27 may be inserted into the PTO as an interim update. This would normally be done only in cases of work stoppage or to eliminate safety hazards. The TO Manager must issue an index page with each PCR/update to identify all current updates; the index page will be dated and identify the PTO, updates, and organizations affected.

9-3 PROCEDURES FOR AFTO FORM 27.

9-3.1 The AFTO Form 27 is the primary vehicle for submitting updates and improvements to PTOs. The AFTO Form 27 will be used by the TO verification team, and, when authorized by the TO Manager, other users of PTOs on all programs. The criteria for submitting and processing Emergency, Urgent and Routine AFTO Forms 27 are specified in paragraph 9-5 below.

9-3.2 The TO Manager is responsible for determining when the AFTO Form 27 will no longer be used to recommend updates or improvements to PTOs. This is normally after verification has been completed. However, prior to issue of formal TOs, the TO Manager may continue to manage the TO update program outside the formal TOIS, and may use any of the above forms until that time.

9-4 ENTRIES ON AFTO FORMS 27.

AFTO Form 27 entries shall be typed or handwritten legibly in black or blue-black ink. The AFTO Form 27 will be completed as follows:

9-4.1 SECTION I, ROUTING AND IDENTIFICATION:

9-4.1.1 BLOCK 1 - TO (TO Manager/Designated Representative): Enter the complete 3/4-line address from either the TO Verification Status Page (VSP) or as directed by TO Manager letter/ message through the MAJCOM.

9-4.1.2 BLOCK 2 - FROM (Organization Reporting): Enter the complete 3/4-line address of the organization submitting the PCR or conducting the verification.

9-4.1.3 BLOCK 3 - CONTROL NUMBER: Leave blank; the TO Manager will assign this number as specified in the program TOMP.

9-4.1.4 BLOCKS 4 thru 6: Self-explanatory.

9-4.1.5 BLOCKS 7 and 8: If more than one paragraph, function or figure is involved, enter "See Block 17" and enter the specific paragraph, function or figure numbers there.

9-4.1.6 BLOCK 10 - NATURE OF FORM: Enter an "x" in either "PCR (Section II)" or in "Verification (Section III)". This indicates which sections of the form to complete. If a verification record AFTO Form 27 also contains recommended TO updates, put an "x" in both blocks.

9-4.1.7 BLOCK 11 - ORIGINATOR'S/SYSTEM VERIFICATION MANAGER'S (SVM) SIGNATURE and DATE: Enter the full name, grade, DSN number and signature of the originator or SVM, and the date signed.

9-4.1.8 BLOCK 12 - ORIGINATOR'S SUPERVISOR/VERIFICATION TEAM MANAGER'S SIGNATURE and DATE: The responsible individual will review the form for accuracy, duplication, etc., and will indicate AFTO Form 27 approval by entering their full name, grade, DSN number, signature and the date. Disapproved forms will be returned to the originator with an explanation of the disapproval action. Approved forms will be forwarded as directed by the TO Manager.

9-4.2 SECTION II, PUBLICATION CHANGE REQUEST:

9-4.2.1 BLOCK 13 - NATURE OF PCR: Enter an "x" to indicate the category of the update request. An "x" in either "EMERGENCY" or "URGENT" requires immediate TO Manager action and preparation of an Interim Operations or Safety Supplement, or TO Page Supplement to preclude work stoppage or possible injury to personnel.

9-4.2.2 BLOCKS 14 thru 16: Leave blank; the TO Manager will complete.

9-4.2.3 BLOCK 17 - STATEMENT OF DEFICIENCY (Attach additional sheets if required): Enter a concise description of the deficiency or deficiencies discovered.

9-4.2.4 BLOCK 18 – RECOMMENDED CHANGE (Attach additional sheets or mark-up copy if required). When recommended changes are included, word them exactly as they should appear in the TO. If the wording is not known, that is, the update will require engineering or research beyond the capability of the reporting unit, specify the type of change required (e.g., "Add more in-depth fault isolation procedures for the _____ subsystem.") and add the statement "Unable to develop at field level."

9-4.2.4.1 Minor corrections may be entered in this block and on continuation sheets. Larger corrections may be attached as mark-up copies of the procedures or paragraphs verified. If additional sheets or mark-up pages are required, indicate the number of pages in this block.

9-4.2.4.2 Attaching "mark-up" copies of TO pages or procedures is encouraged when this would clarify the changes requested.

9-4.2.4.3 At the bottom of Block 18, put an "x" in either VERIFICATION REQUIRED? "YES" or "NO" to indicate whether the recommended procedures OR the verification recorded on the reverse requires (re-)verification.

9-4.3 SECTION III, VERIFICATION RECORD (AFTO Form 27 Reverse):

9-4.3.1 BLOCKS 19 thru 22: Self-explanatory.

9-4.3.2 BLOCK 23 – DEVIATIONS: List any deviations to TO-specified procedures or support equipment which occurred during the verification. The deviations must have been approved by the TO Manager or Verification Team Manager.

9-4.3.3 BLOCK 24 RESULTS: Enter a narrative description of the verification results.

9-4.3.3.1 If verification of multiple procedures or sections is being reported, list them in this block.

9-4.3.3.2 Enter either "Verified as written" or "Verified, corrections required (See Block 18)."

9-4.3.4 BLOCK 25 – RECOMMEND FORMALIZATION?: Enter an "x" in either "YES" or "NO."

9-4.4 SECTION IV, DISPOSITION AND APPROVAL:

9-4.4.1 BLOCKS 26a thru 26c: Leave blank; completed by the TORB/FTORB as directed by the

TOMP. Block 26b must indicate whether formalization is or is not approved, and whether or not pre-publication review is waived.

9-4.4.2 BLOCK 26a(4) TO MANAGER/DESIGNATED REPRESENTATIVE: For flight manuals, the Flight Manual Manager (FMM) or FMM's representative will sign this block.

9-5 PROCESSING AFTO FORMS 27.

PCRs will be identified in the three categories listed below. Changes to report categories will not be made without the express concurrence of the TO Manager and the submitting MAJCOM.

9-5.1 Emergency PCRs. Recommendations for correcting a deficiency in a TO which, if not corrected, WOULD result in fatality or serious injury to personnel, destruction or extensive damage to equipment or property, or inability to achieve or maintain operational posture (MISSION ESSENTIAL), including field-level work stoppage.

9-5.1.1 Emergency PCRs will be submitted by message, facsimile, E-mail, or other electronic means. When not an electronic transmission of the AFTO Form 27 itself, the relevant data entries from the form must be included in the PCR message.

9-5.1.2 The TO Manager or designated representative must acknowledge receipt of Emergency PCRs within 24 hours of transmission. If acknowledgment is not received, the initiator must follow-up on the report.

9-5.1.3 The TO Manager must provide written corrective action or downgrade the PCR within 48 hours (72 hours for work stoppage) of receipt.

9-5.2 Urgent PCRs. Recommendations for correcting a deficiency in a TO which, if not corrected, COULD result in personnel injury, damage to equipment or property, reduce operational efficiency or jeopardize the safety or success of mission accomplishment. All TCTO deficiencies and HAZMAT/ODS reports are submitted as urgent.

9-5.2.1 Urgent PCRs will be transmitted by electronic means (see 9-5.1.1).

9-5.2.2 The TO Manager or designated representative must acknowledge receipt (and downgrade if applicable) of Urgent PCRs within 48 hours of transmission. If acknowledgment is not received, the initiator must follow-up on the report.

9-5.2.3 The TO Manager must provide written corrective action for approved Urgent PCRs or downgrade the PCR within 15 calendar days.

9-5.3 Routine PCR. All other recommendations for update/improvement not requiring emergency or urgent action will be submitted electronically or by mail as routine PCRs.

9-5.3.1 The TO Manager or designated representative must reply to routine reports within 30 calendar days of receipt, advising of action taken and the reason when disapproved.

9-5.3.2 Approved reports which could be eligible for submission of an after-the-fact suggestion (paragraph 9-9) will have block 18 annotated with the expected tangible or intangible benefits and justification (AFH 38-402).

9-5.4 The TO Manager or designated representative will forward approved PCRs to the contractor for incorporation in the next update to the PTO or TO.

9-5.5 If approved routine reports cannot be published within 210 days of receipt by the reviewing agency, an Interim Safety or Operational Supplement (ISS, IOS), or permission to use the approved AFTO Form 27 procedures will be generated by the TO Manager if requested by the users. These interim procedures do not have to be replaced until the next TO change/revision is published.

9-6 CONTROL AND TRACKING OF PCRS.

The TOIS cannot track AFTO Forms 27, and will not be used to track AFTO Forms 22 or AF Forms 847 on PTOs. The TO Manager must develop a system to track and control PCRs from the time they are received or generated until they are incorporated into the TOs. Specific items to be recorded include date received/initiated, action taken, date disapproved or forwarded to contractor, and date incorporated. The method for tracking will be specified in the TOMP. AFTO Forms 27 must be maintained on file for at least two years, in accordance with AFMAN 37-139.

9-7 CLASSIFIED PCRS.

PCRs containing classified data will be marked with the proper classification and appropriate downgrading and declassification instructions according to DOD 5200.1-R/AFI 31-401. The program Security Classification Guide (SCG) will be referred to when determining if classified data is included. Unclassified PCRs on classified TOs will be marked "This is an unclassified AFTO Form ___ on a classified manual." Security violations involving TOs will be reported in accordance with DOD 5200.1-R/AFI 31-401, not by use of a PCR.

9-8 UPDATE DISTRIBUTION AND FILING.

The provisions of TO 00-5-2 do not apply to the distribution of PTO updates or PCRs approved for use with PTOs during acquisition. The TO Manager must make arrangements to provide copies of approved updates to all affected users of the TOs. ISSs and IOSs to PTOs will be posted the same as for formal TOs. PCRs will be posted like the Interim TOs. Operational PTO files will contain only those PCRs/updates which apply to that organization; reference files may contain all PCRs/updates applicable to the command.

9-9 PCRS AND THE SUGGESTION PROGRAM.

9-9.1 After-the-fact suggestions (AF Forms 1000) may be submitted on approved PCRs, but will not be eligible on TOs undergoing acquisition unless they provide an improved work procedure or method, such as welding in lieu of fasteners, or local repair instead of discard.

9-9.2 PCRs identifying errors in TOs or procedures prior to verification, i.e., wrong screws, erroneous measurements, incorrect references, typographical errors, etc., are ineligible for consideration as suggestions. Corrections of this type are an integral part of the verification process.

9-9.3 The suggestion will be submitted with a copy of the approved PCR to the initiator's base level Suggestion Program Office. The Suggestion Program Manager will accept the suggestion and base the award on the PCR data. If suggestion benefits were not indicated on the PCR, the Suggestion Program Manager will route the suggestion package, with a copy of the approved PCR attached, to the TO Manager. If the PCR is not eligible for a confirmatory suggestion, the TO Manager will disapprove the package using an AF Form 1000-1. For eligible packages, the TO Manager will annotate the suggestion benefits and justification on the PCR.

9-9.4 Stand-alone suggestions which do not recommend specific TO updates will be evaluated and approved or disapproved according to AFI 38-401.

PRELIMINARY TECHNICAL ORDER *(PTO)* PUBLICATION CHANGE REQUEST *(PCR)*/TO VERIFICATION RECORD/APPROVAL

AUTHORIZED USE: THIS FORM WILL BE USED ONLY AS DIRECTED BY THE ACQUISITION TECHNICAL ORDER MANAGEMENT AGENCY *(TOMA) (T.O. 00-5-3, CHAPTER 12).*

I. ROUTING AND IDENTIFICATION

1. TO *(TOMA/Designated Representative)*	2. FROM *(Organization reporting)*	3. CONTROL NUMBER

4. PUBLICATION NUMBER	5. DATE OF PUBLICATION	6. CHANGE NO./DATE	7. PARAGRAPH/FUNCTION NO.(s)	8. FIGURE

9. PAGE(s)	10. NATURE OF FORM
	☐ PCR *(Section II)* ☐ VERIFICATION *(Section III)*

11. ORIGINATOR'S/SYSTEM VERIFICATION MANAGER'S *(SVM)* SIGNATURE	DATE

12. ORIGINATOR'S SUPERVISOR/VERIFICATION TEAM MANAGER'S SIGNATURE	DATE

II PUBLICATION CHANGE REQUEST

13. NATURE OF PCR	14. DATE PCR RECEIVED	15. ACTION TAKEN	16. DATE PCR ACTION CLOSED
☐ EMERGENCY ☐ URGENT ☐ ROUTINE		☐ APPROVED AS WRITTEN ☐ APPROVED WITH MODIFICATION ☐ DISAPPROVED *(See Block 16)*	

17. STATEMENT OF DEFICIENCY *(Attach additional sheets if required)*

18. RECOMMENDED CHANGE *(Attach additional sheets or mark up copy if required)*

VERIFICATION REQUIRED? ☐ YES ☐ NO

AFTO FORM 27, APR 94 *(EF-V1)* *(PerFORM PRO)* PREVIOUS EDITION IS OBSOLETE.

H9601663

Figure 9-1. AFTO Form 27, Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval (Sheet 1 of 2)

III	VERIFICATION RECORD
19. CONTRACT NUMBER	20. VERIFICATION DATES A. START _____ B. COMPLETE _____
21. VERIFICATION SITE	
22. TYPE VERIFICATION ☐ A. PERFORMANCE ☐ B. SIMULATION ☐ C. DESK-TOP ANALYSIS	
23. DEVIATIONS *(List any equipment or procedures not in accordance with the T.O.)*	
24. RESULTS	
25. RECOMMEND FORMALIZATION? ☐ YES ☐ NO	

IV	DISPOSITION AND APPROVAL	
26. TECHNICAL ORDER REVIEW BOARD/FLIGHT TECHNICAL ORDER REVIEW BOARD *(TORB/FTORB)* AND TOMA USE ONLY		
REVIEW BOARD (a)	REVIEW BOARD DISPOSITION (b)	SIGNATURE AND DATE (c)
(1) USING COMMAND		
(2) ILS MANAGER/EQUIPMENT SPECIALIST		
(3) CONTRACTOR		
(4) TOMA/DESIGNATED REPRESENTATIVE		
(5) OTHER		
(6) OTHER		
(7) OTHER		

AFTO FORM 27, APR 94 *(REVERSE) (EF-V1)*

H9601660

Figure 9-1. AFTO Form 27, Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval (Sheet 2 of 2)

TECHNICAL ORDER REVIEW COMMENT SHEET			PAGE OF
T.O. NUMBER		TITLE	
NAME OF REVIEWER		ORGANIZATION	PHONE
PAGE NUMBER	PARAGRAPH OR FIGURE NUMBER	COMMENTS	

AFMC FORM 158, OCT 69

H9601661

Figure 9-2. AFMC Form 158, Technical Order Review Comment Sheet

CHAPTER 10

SAFETY AND HEALTH

10-1 GENERAL.

All TOs, MIL-PRF or commercial, must identify any hazards that exist, and must not create hazardous situations. Everyone involved with the TO System must assist in evaluating, identifying, and correcting safety and health hazards. MAJCOMs and Product and Air Logistics Centers possess safety offices chartered to review TOs for ground, weapon, nuclear, and flight safety. They should be involved from the start of TO development, beginning with the TOP/RC. They will provide guidance on the placement, wording and application of warnings, according to MIL-STD-38784. Commercial manuals may require supplementing to add warnings and cautions due to the Air Force environment or application. Any conflict in the use or wording of warnings shall be resolved by HQ AFMC/ SE.

10-2 TO MANAGER RESPONSIBILITIES.

The TO Manager should establish points of contact with engineering and safety offices to resolve safety issues. Questions related to design or materials which increase the risk to personnel or equipment shall be reported to the Safety Office for resolution.

10-3 GROUND SAFETY.

Safety Offices are tasked to periodically review design handbooks, TOs, MIL-PRFs, MIL-STDs, and Table of Allowances to ensure safety and health criteria and procedures (to include fire safety and environmental concerns) in those documents comply with Occupational Safety and Health guidance (AFI 91-301).

10-3.1 The acquisition agency Ground Safety Office (GSO) is responsible for supporting TO reviews during the acquisition process. When the acquisition agency is at a Product Center, coordination with the Air Logistics Center GSO is essential. GSOs are the subject matter experts for electrical, mechanical, chemical, radiation, and laser hazards.

10-3.2 TO procedures shall be developed to protect equipment from abuse, inadvertent operation, or any condition which could cause damage or degradation. However, the TO must not become a work-around for hazardous equipment design.

10-3.3 Electro-Static Discharge Sensitive (ESDS) devices within most modern electronic equipment require special protection and handling procedures. The guidance contained in TO 00-25-234 and MIL-STD-1686 may be provided to the contractor as source data and references.

10-4 POLLUTION PREVENTION.

Preventing pollution requires a proactive and dynamic management approach, because prevention achieves environmental standards through source reduction rather than after-the-fact correction.

10-4.1 TO procedures shall be developed to reduce the use of hazardous materials in all phases of weapon system development from concept through production, deployment and ultimate disposal. The TO Manager must ensure compliance with Air Force 32-70 series instructions.

10-4.2 Points of contact should be established with engineering, safety, environmental management, bio-environmental engineering (BEE), and R&D offices to resolve pollution prevention issues.

10-4.3 If Class I Ozone Depleting Substances (ODS) must be used, the SM must obtain a waiver from HQ USAF for their use.

10-5 WEAPON SAFETY.

10-5.1 Weapon safety programs are managed at several levels. Chapters 3 and 12 of this TO list OPRs and procedures for specific types of TOs. These OPRs will identify the appropriate safety offices. Four major areas of weapon safety must be addressed for any military system; explosive, nuclear, flight and missile safety.

10-5.2 Explosive Safety Requirements. Basic TOs and all updates containing procedures on the operation, maintenance, inspection, modification, disposal, etc. of aircraft systems, ammunition, missiles (strategic or tactical), missile motors, explosives, egress systems, armament items (such as guns, launchers, dispensers, pods, etc.), and handling, support or test equipment peculiar to these items must receive a weapons safety review by the Center Weapons Safety Office. All TO procedures involving explosives must comply with AFI 91-201.

EXCEPTIONS: OO-ALC/LIW has safety review responsibility for TOs prime at Hill AFB. The Naval EOD Technology Division (NAVEOD-TECHDIV) performs an internal explosives safety review on all Category 60 EOD TOs.

10-5.3 Nuclear Safety. Nuclear safety reviews are required on any TO that describes the storage, handling, assembly, checkout, testing, maintenance or delivery of nuclear weapons, nuclear weapons critical circuitry, and nuclear weapon support equipment. Nuclear safety reviews must include a review of the Nuclear Surety rules for the military system or commodity.

10-5.4 Flight Safety. Flight safety reviews for FMP TOs are the responsibility of the FMM. The TO Manager is responsible for ensuring contractor compliance with direction. Cargo aircraft loading manuals which deal with explosives or nuclear weapons and weapon loading and delivery manuals must receive required explosive and/or nuclear safety reviews as well as flight safety reviews.

10-5.5 Missile Safety. Missile safety reviews will be conducted on the operation and maintenance procedures used with missile weapon systems, in addition to any explosive and/or nuclear safety reviews required.

10-6 HEALTH GUIDANCE.

The BEE section at USAF hospitals provides guidance on health-related issues. Noise hazard analyses, toxicology hazard analyses, and Chemical/ Biological/ Radiological assessments are available to aid in determining risks and warnings to be applied to TOs.

CHAPTER 11

SECURITY ASSISTANCE TO PROGRAM

11-1 GENERAL.

This chapter contains information pertaining to the acquisition of TOs required to support USAF military systems and commodities provided to Security Assistance Program (SAP) customers. This includes military systems and commodities sold to foreign governments and international organizations under the SAP. Foreign Military Sales (FMS), Military Assistance Programs (MAP), consortium agreements, coproduction agreements and direct sales programs are all included under the SAP. Policies and procedures for the Security Assistance TO Program (SATOP) are specified in TO 00-5-19. TO 00-5-3 should also be used to provide acquisition guidance to the TO Manager.

11-2 RESPONSIBILITIES.

SATOP responsibilities are as follows:

11-2.1 HQ USAF/LGM and Secretary of the Air Force (SAF)/AQIK are responsible for determining FMS TO policy and approving policy changes.

11-2.2 The Air Force Flight Standards Agency (AFFSA) has delegated responsibility for management of the Flight Manuals Program (AFI 11-215), including sales of FMP publications to foreign countries, to HQ AFMC/DOO.

11-2.3 SAF/IAD is responsible for disclosure policy.

11-2.4 HQ AFMC/IA has delegated responsibility for management of the SATOP to the Air Force Security Assistance Center (AFSAC)/XMXB.

11-2.5 The TO Manager for a military system or commodity program manages Country Standard TOs (CSTOs) for that program. The TO Manager is responsible for determining the types of CSTOs required to support hardware and software for a particular country and, prior to signature of the Letter of Agreement (LOA) between the US and the foreign country, to provide pricing and availability (P&A) data. Information related to the P&A process is contained in AFI 16-101. The TO Manager's responsibility for CSTO management after the LOA is signed is the same as for other TOs.

11-3 TYPES OF SATOP MANUALS.

11-3.1 USAF TO. A manual developed for use by USAF activities in the operation and maintenance of USAF military systems and commodities. A USAF TO may be provided to SATOP countries on a reimbursable basis when USAF policy and disclosure criteria permit.

11-3.2 Country Standard TO (CSTO). A TO developed to support a SAP country's military system or commodities that cannot be supported by direct use of a USAF TO. CSTOs are assigned TO Numbers (similar to USAF TOs) which are prefixed with a country designator code, and indexed in separate CSTO Indexes. CSTO numbers are assigned by OC-ALC/TILUF in the Security Assistance TO Data System (SATODS). This office also produces and distributes CSTO indexes and TO 0-1-71, Consolidated Security Assistance TO Index. The following are four types of CSTOs that can be procured:

11-3.2.1 An individual country CSTO that is procured for, and can only be used by, one particular country.

11-3.2.2 An "XX" CSTO that is procured for, and can be used by, several countries.

11-3.2.3 An individual supplemental CSTO to a USAF TO (or "XX" CSTO) that is procured for, and can be used by, one particular country.

11-3.2.4 An "XX" supplemental CSTO to a USAF TO that is procured for, and can be used, by several countries.

11-3.3 Consortium TO. A TO developed to support a military system or commodity on which the USAF has an agreement to share development costs with one or more countries or international organizations.

11-3.4 Baseline TO. A TO used as the data base for development and follow-on maintenance of a CSTO.

11-3.5 "M" Symbol TO. A USAF TO that has been rescinded for USAF use but is retained until Air Force stocks are depleted to support SAP military systems or commodities. Once existing stock of an M-Symbol TO is depleted, the manual must be converted to a CSTO prior to reprinting for any future requirements.

CHAPTER 12

SOURCE DATA

12-1 GENERAL.

Source data, as used in this TO, is information of any sort used to develop or update TOs. The contractor uses source data from program development and test for program TOs. The TO Manager must acquire any source data required to develop or update non-program TOs (e.g., weapon data to update aircraft loading TOs) or to assist associated contractors with TO development or update (e.g., a support equipment vendor). The TO Manager must follow up on source data delivery to ensure that TOs to be developed or updated will be published in time to meet program milestones.

12-1.1 Types of TOs where source data would be required include, but are not limited to, Aircraft Emergency Rescue, EOD/RSP, munitions loading, munitions positioning & tiedown, weapons delivery, and explosive storage & maintenance manuals. Source data on support equipment provided by other contractors is required for prime contractor developed TOs.

12-1.2 The contractor provides source data as required by the contract. The TO Manager must work with the source data recipient to ensure that data provided is adequate.

12-1.3 Procedural data is a special category of source data required during most TO development and acquisition programs. It is a homogenous and organized grouping of the data required to perform operations and maintenance tasks on a military system or commodity item. It is acquired when development of a stand-alone TO is inappropriate, or when TOs managed by other agencies must be updated. The content of procedural data is determined by the appropriate contract requirements, and includes text, diagrams, illustrations, charts, schematics and other data required to describe the procedures and support equipment.

12-1.4 The OPRs who need the data must provide specific content requirements. These OPRs must be included in program TO Planning/ Requirements Conferences (chapter 6). Some of the OPRs are listed in chapter 3, and additional munitions-unique OPRs and requirements will be covered in this chapter.

12-1.5 Delivery requirements may differ between OPRs and users as well. In some cases a single delivery may be sufficient, while other cases require deliveries or updates throughout the period of the contract.

12-2 ACQUISITION OF SOURCE DATA.

12-2.1 Many different MIL-PRFs and DIDs may be used to procure source and procedural data, including those for Standard Data Packages (SDPs), engineering drawings, test and inspection reports, interface control documentation, and supportability analysis tasks. Explosive Ordnance Disposal source data is acquired using DI-SAFT-80931. Aircraft Emergency Rescue Information (Fire Protection) source data is acquired using DI-TMSS-81532. Existing contractor data may be acquired through the contract Data Accession List. If existing TOs managed by the TO Manager or temporarily placed under the TO Manager's control require updating, Table 2 of the TM-86-01 may be used to obtain updates, supplements or source data.

12-2.2 Procedures for source data acquisition are the same as for TOs. Source data requirements are determined during the TO Guidance Conference. In-Process Reviews are held as required. The contractor applies their internal QA management process and delivers an adequate, accurate data package for Air Force verification. After verification is complete, the contractor makes corrections as required, the package receives a final review if necessary and is delivered to the appropriate agency.

12-3 NONNUCLEAR WEAPONS DELIVERY SOURCE DATA – WEAPONS SOURCE DATA PACKAGE (AIRCRAFT -34 SERIES TOS AND TO 1-1M-34 SERIES).

The Weapons Source Data Package (WSDP) provides aircrew weapons delivery information for newly developed or modified nonnuclear munitions.

12-3.1 The WSDP is developed to support four main requirements: (1) AFMC Development Test and Evaluation (DT&E); (2) Initial Operational Test and Evaluation (IOT&E); (3) revisions to both aircraft-specific weapons delivery manuals (-34 series) and the TO 1-1M-34 series Standard Volumes; and (4) user-unique Flight and/or Weapons Delivery Planning Programs. (Planning Programs provide the user with automated ballistic solutions for mission planning.)

12-3.2 WSDP data consists of a section for generic munitions data and sections of aircraft-

specific data for each aircraft which will employ the munitions item. WSDP content is described in MIL-PRF-38384.

12-3.3 Delivery envelopes for unguided munitions are normally developed by 46OG/OGS from computer simulation programs; envelopes for guided munitions (six degree of freedom or "6DOF" weapons) are normally provided by the weapon contractor as a part of the WSDP.

12-3.4 Procedures and Responsibilities.

12-3.4.1 WSDP acquisition participants are the munitions TO Manager, using command(s), aircraft SMs, SA-ALC/LF (for TO 1-1M-34), the Responsible Test Organization (RTO), the Air Force SEEK EAGLE Office (AFSEO), and 46OG/OGS.

12-3.4.2 The contractor develops the WSDP to meet established program schedules; it should be delivered at least 30 calendar days prior to the start of DT&E. During IPRs, the WSDP is reviewed for use of common and standard terms for munitions items. Contractor QA is limited to Desk-Top Analysis (chapter 7).

12-3.4.3 RTOs, AFSEO and 46OG/OGS use the WSDP during aircraft/munitions testing to verify procedures. 46OG/OGS initiates action to incorporate the weapons data into TO 1-1M-44FD-series {Combat Weapon Delivery Software (CWDS) on floppy disks}, and user-unique Flight and/or Weapons Delivery Planning Programs. The testing agencies document any discrepancies and forward them to the munitions TO Manager for action. An updated WSDP must be available 30 days prior to the start of IOT&E.

12-3.4.4 Using commands and support agencies use the WSDP during IOT&E and forward any additional discrepancies to the munitions TO Manager.

12-3.4.5 The munitions TO Manager distributes the final WSDP to the appropriate aircraft SMs, SA-ALC/LF (for TO 1-1M-34) and 46 OG/OGS. The TO Manager will also provide initial hardware delivery and user need dates (SEEK EAGLE PMD 5077) for informational and work effort planning purposes.

12-3.4.6 AFSEO issues the Certification Recommendation (CR) upon completion of SEEK EAGLE testing. The CR is required by the aircraft SMs prior to formalization of the weapons delivery TOs.

12-3.4.7 The aircraft SMs update each applicable aircraft weapons delivery TO for their systems, make formal distribution, and issue the Certification Completion Notification.

12-3.4.8 46OG/OGS provides SA-ALC/LF with verified copies of the CWDS for formal distribution to the field, and provides unique Flight and/or Weapons Delivery Planning Programs to the user(s) as directed.

12-3.4.9 SA-ALC/LF submits an update for the 1-1M-34 TO.

12-4 NONNUCLEAR MUNITIONS LOADING SOURCE DATA – STANDARD SOURCE DATA PACKAGE (AIRCRAFT -33 SERIES TOS AND TO 1-1M-33).

12-4.1 A Standard Source Data Package (SSDP) containing nonnuclear munitions loading source data is required during the development and testing of new munitions items or systems, for integration of existing munitions with new aircraft, for integration of new munitions with new aircraft, and for major modifications to existing aircraft/munitions configurations.

12-4.2 SSDP contents are specified in MIL-PRF-9977. It contains munitions descriptive data, munitions preparation data, and loading procedures, but NO aircraft-specific procedures or data. The SSDP becomes a Standard Data Package (SDP) once the data are verified and approved.

12-4.3 The SSDP is maintained by the munitions TO Manager and is used to update the "approved" SDP. The SDP is maintained and published by OO-ALC/LIWS, Hill AFB UT, and is provided to aircraft SMs for development of aircraft -33 series TOs and checklists, and to SA-ALC/LF for TO 1-1M-33.

12-4.4 The -33 series TOs and checklists contain descriptive data and procedures for loading nonnuclear munitions on or into Air Force aircraft. TO 1-1M-33 contains descriptive data for munitions, suspension equipment, guns and gun pods, support equipment, and supplementary information.

12-4.5 SSDP acquisition participants include the TO Manager, using command(s), aircraft SMs, OO-ALC/LIWS (for the SDP) SA-ALC/LF (for TO 1-1M-33), the RTO, and 46OG/OGS.

12-4.6 Procedures for New Munitions. The following steps outline the sequence of events for incorporation of new munitions items on new or existing aircraft. Paragraph 12-4.7 provides abbreviated procedures for incorporating existing munitions into additional military systems.

12-4.6.1 The contractor develops the SSDP to meet established program schedules; it should be delivered at least 30 calendar days prior to the start of DT&E. During IPRs, the SSDP is reviewed for use of common and standard terms

for munitions items. Contractor QA is limited to Desk-Top Analysis (chapter 7).

12-4.6.2 OGS reviews and approves the SSDP for RTO use during DT&E. Air Force Development Test Center (AFDTC) and/or RTO procedures and checklists used by AFMC load crews during DT&E of using command aircraft must be reviewed and approved by the appropriate aircraft SMs prior to use. In addition, procedures and checklists used by using command load crews require using command approval.

12-4.6.3 The 46OG/DOO or equivalent office at other RTOs prepares an AFDTC or local RTO -33 checklist from the SSDP. The checklist will be written and verified according to AFDTCR 136-3 or RTO directives, and will be used to support DT&E and SEEK EAGLE testing.

12-4.6.4 After completion of DT&E and SEEK EAGLE testing, comments or corrections to the SSDP are coordinated with 46OG/OGS and sent to the TO Manager.

12-4.6.5 The TO Manager will initiate verification scheduling in coordination with the munitions OT&E manager and the lead MAJCOM. Verification should be scheduled within 120 days after the estimated receipt of the revised SSDP. The lead MAJCOM will develop and publish a coordinated verification schedule based on the availability of aircraft, personnel and equipment required for verification.

12-4.6.6 The 46OG/OGS reviews and approves the revised SSDP, and forwards it to affected agencies (including SA-ALC/LF) at least 90 days prior to the scheduled start of verification. The affected aircraft SMs develop (or contract for development of) preliminary -33 loading procedures for each aircraft involved, and provide them to the affected using commands, OO-ALC/ LIWS, and the OT&E manager at least 30 days prior to verification.

12-4.6.7 Verification participants will include representatives from each aircraft SM involved, affected using commands, the OT&E manager, OO-ALC/ LIWS, the munitions TO Manager, and 46OG/OGS. The lead MAJCOM will provide the verification team manager (VTM) for multi-aircraft verifications, while the aircraft SM provides the VTM for single aircraft verifications. The load crew is provided by the using command. Both the SSDP and the preliminary -33 procedures are verified.

12-4.6.8 After completion of verification, OO-ALC/LIWS converts the SSDP to an "approved" SDP. Required verification changes to the SSDP are sent through the munitions TO Manager to the contractor for update. Changes to preliminary -33 procedures are routed to the aircraft TO Managers for similar update.

12-4.6.9 The verified SDP and preliminary -33 procedures, marked "For OT&E Use Only," are used for the duration of OT&E. The test team continues to evaluate the SSDP, SDP, and preliminary aircraft -33 procedures during OT&E and submits comments and recommended corrections to the respective OPRs.

12-4.6.10 Proposed updates and corrections are approved by a TORB consisting of the TO Manager(s), 46 OG/OGS, the using commands and OO-ALC/LIWS. OO-ALC/LIWS updates and distributes the approved SDP to aircraft SMs and SA-ALC/LF. The SM TO Managers will use the SDP and -33 procedures to develop formal aircraft -33 TOs. The munitions TO Manager will maintain the currency of the SSDP.

12-4.6.11 Aircraft SMs are responsible for providing SA-ALC/LF and OO-ALC/LIWX with updated descriptive data (including illustrations) for new or modified aircraft-peculiar test equipment, Munitions Material Handling Equipment, special tools, etc., required for inclusion in TO 1-1M-33 and 11A-1-63. SA-ALC/LF and OO-ALC/LIWX will use the SDP and SM inputs to update the TOs.

12-4.6.12 Flight certification (SEEK EAGLE) is dependent upon publication of formal -1, -33, and -34 TOs and update of TOs 1-1M-33 and 1-1M-34. This must be accomplished in time to meet the need date specified in the SEEK EAGLE PMD.

12-4.7 Procedures For Existing Munitions. The following abbreviated steps are for incorporation of existing munitions on additional or new aircraft.

12-4.7.1 The using command requests SEEK EAGLE certification for additional aircraft which require certification with an existing munitions or stores item.

12-4.7.2 The aircraft TO Manager (or munitions TO Manager during munitions acquisition) will request the using command to coordinate with the affected agencies and schedule verification of the loading procedures.

12-4.7.3 The aircraft TO Manager requests the applicable SDP(s) from OO-ALC/LIWS and develops (or contracts for the development of) preliminary -33 loading procedures. The procedures must be available for review at least 30 days prior to the start of verification.

12-4.7.4 Verification and update of procedures are the same as for new munitions.

12-4.7.5 Upon completion of SEEK EAGLE testing and receipt of the CR, the aircraft SM will provide any changed or modified data to SA-ALC/LF for inclusion in TO 1-1M-33 and to OO-ALC/LIWX for inclusion in TO 11A-1-63, incorporate necessary changes into the aircraft -33 TO and issue the certification completion notice.

12-5 NONNUCLEAR EXPLOSIVE ORDNANCE DISPOSAL (EOD)/RENDER SAFE PROCEDURES (RSP) SOURCE DATA.

EOD/RSP source data, developed according to DID DI-SAFT-80931, provides information and procedures for the development and/or update of joint service Category 60 TOs on newly developed or modified bombs and warheads; fuzes and fuzing systems; guided and ballistic missiles, grenades, artillery, mortar, rocket, and small arms ammunition; mines and torpedoes; depth charges, demolition charges, and pyrotechnics; clusters and dispensers; cartridge- and propellant-actuated devices (such as aircraft egress systems); and all similar or related items or components which may cause injury to personnel or damage to material. This includes ALL new or modified aircraft, munitions, delivery systems and ordnance items that contain explosives, propellants, and/or hazardous chemicals.

12-5.1 Category 60 TOs (and source data) differ from maintenance TOs in that they provide information and guidance rather than detailed step-by-step procedures. These TOs are typically used in accident, incident, mishap, dud-dropped and dud-fired situations where the systems or items have been damaged or failed to function as designed and standard TO maintenance procedures cannot be used.

12-5.2 Det 63, AAC/CC, is the Air Force centralized agency for EOD data acquisition and liaison with the NAVEODTECHDIV.

12-5.3 The EOD source data package (which includes RSP) is developed to support three main requirements: (1) RTO need for emergency EOD, RSP and (if required) recovery procedures during DT&E operations, product improvement testing, failure analysis, and initial space vehicle deployment; (2) Using Command need for emergency EOD and RSP during OT&E operations; and (3) Development of the Joint Service Category 60 TOs by NAVEODTECHDIV.

12-5.4 The TO Manager will invite EOD representatives from Det 63, the RTO and using commands to the TO Planning/Requirements Conference (chapter 6). Det 63 will normally be delegated as the representative for other EOD activities. At the conference, the representatives will identify and justify requirements for data for EOD operations, and commodities and recovery equipment to support EOD TO validation and verification, and determine delivery schedules. EOD SDP is developed according to DID DI-SAFT-80931.

12-5.5 Critical delivery dates are initial delivery for DT&E, delivery for OT&E, and delivery for TO development. It may take up to 12 months to develop the TO, depending on availability of hardware for validation and verification. DOD requires delivery of verified TOs 30 days prior to "fielding/stockpile" (DODD 5160.62 and AFI 32-3002).

12-5.6 EOD SDP Procedures.

12-5.6.1 The contractor develops the SDP according to DI-SAFT-80931; it should be delivered at least 60 calendar days prior to the scheduled delivery of assets for Air Force testing. During IPRs, the SDP is reviewed for conformance to item and system configuration, and identification of Hazardous Item Recovery Candidates required for recovery and test failure analysis. Det 63 or a designated representative will participate in the Contractor QA process.

12-5.6.2 The AFMC EOD RTO supporting system or commodity testing will integrate the SDP data into their Test Support Project for the system or commodity and submit it to a Safety/Hazard Review Board for approval before use. During DT&E, the RTO will document any comments or discrepancies with the SDP, and forward them to the TO Manager and Det 63. If at any time the data is determined to be "no longer safe for use" (due to errors in the data, modifications to the hardware, or other reasons), the RTO will stop testing, notify the TO Manager of actions required to resolve the problem(s), and obtain corrections prior to continuing testing. Det 63 and the using command EOD representative must review and approve the DT&E-revised SDP prior to further use.

12-5.6.3 Procedures for OT&E are the same as for DT&E, except that the EOD RTO is usually a using command agency and must ensure the using command has approved the data for use. The OT&E-revised SDP is used to support development of the joint service Category 60 TO. The TO Manager will reverify the user's TO need date and ensure Det 63 has incorporated it in their schedules.

12-5.6.4 Det 63 initiates the joint service development project at NAVEODTECHDIV, and establishes a distribution need date and priority (based on user needs) on the Project Acceptance Form. The NAVEODTECHDIV will develop, validate, verify and publish the EOD TO for DOD use. Distribution media will be either CD-ROM, microfiche, or paper (for foreign customers).

12-5.6.5 The TO Manager monitors the development process to ensure required support equipment is available, any hardware configuration changes are forwarded, and delivery schedules will be met. If verified TOs will not be available in time to meet DOD and user requirements, the TO Manager must work with Det 63 to develop interim support procedures.

APPENDIX A

GLOSSARY

I. List of Acronyms:

AAC	Air Armament Center (AFMC)
ABDR	Aircraft Battle Damage (Assessment and) Repair
ACC	Air Combat Command
ACO	Administrative Contracting Officer
ACP	Ammunition Control Point (OO-ALC/LIW)
AETC	Air Education and Training Command
AFCA	Air Force Communications Agency
AFCESA	Air Force Civil Engineering Support Agency
AFDTC	Air Force Development Test Center (AFMC)
AFI	Air Force Instruction
AFMC	Air Force Materiel Command
AFMCI/MAN	AFMC Instruction / Manual
AFOSH STD	Air Force Occupational Safety and Health Standard
AFPD	Air Force Policy Directive
AFSAC	Air Force Security Assistance Center (AFMC)
AFSEO	Air Force SEEK EAGLE Office
AFSPC	Air Force Space Command
AFTO	Air Force Technical Order
AG(S)E	Aerospace Ground (Support) Equipment
AFMETCAL	Air Force Metrology and Calibration (AFMC)
ALC	Air Logistics Center (AFMC): OC – Oklahoma City; OO - Ogden; SA - San Antonio; SM - Sacramento; WR - Warner Robins
AMSDL	Acquisition Management Systems and Data Requirements List
ASA	Administrative Support Agency
ASC	Aerospace Systems Center (AFMC)
BEE	Bio-Environmental Engineering
CALS	Continuous Acquisition and Life-Cycle Support
CCP	Contract Change Proposal OR Command Control Point
CD-ROM	Compact Disk - Read-Only Memory
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CEVG	Combat Evaluation Group
CFAE/CFE	Contractor Furnished (Aeronautical) Equipment (Notice)
CITIS	Contractor Integrated Technical Information Services

CLIN	Contract Line Item Number
CLS	Contractor Logistics Support
CMIS	Configuration Management Information System
COTS	Commercial Off-the-Shelf (Hardware, Software or Manuals)
CPAB	Corrosion Prevention Advisory Board
CPAR	Contractor Performance Assessment Report
CPIN	Computer Program Identification Number
CR	Clarification Request (contracting) OR Certification Recommendation (SEEK EAGLE program)
CSTO	Country Standard TO
CTOCU	Central Technical Order Control Unit
CWDS	Combat Weapons Delivery Software
DAPS	Defense Automated Printing Service
DCMD	Defense Contract Management District
Det	Detachment
DFARS	Defense Federal Acquisition Regulations Supplement
DIC	Direct Image Copy
DID	Data Item Description
DNA	Defense Nuclear Agency
DOD	Department of Defense
DODD/I	Department of Defense Directive/Instruction
DODISS	DOD Index of Specifications & Standards
DOE	Department of Energy
DPRO	Defense Plant Representative Office
DR	Deficiency Report
DSN	Defense Switched Network
DT&E	Development Test & Evaluation
DTD	Document Type Definition
ECP	Engineering Change Proposal
EED	Electro-Explosive Device
EOD	Explosive Ordnance Disposal
ES	Equipment Specialist
ESC	Electronic Systems Center (AFMC)
ESDS	Electro-Static Discharge Sensitive
ETM	Electronic Technical Manual
FAR	Federal Acquisition Regulations
FMM	Flight Manual Manager
FMP	Flight Manuals (Program or Publications) (AFI 11-215)
FMRC	Flight Manual Review Conference

FMS	Foreign Military Sales
FOSI	Formatted Output Specification Instance
FTORB	Flight Technical Order Review Board
G&A	General and Administrative (costs)
GCO	Government Concept of Operations
GFE/GFAE	Government Furnished (Aeronautical) Equipment
GFI	Government Furnished Information
GPO	Government Printing Office
GSO	Ground Safety Office
HAZMAT	Hazardous Materials
HDBK	Handbook
HQ	Headquarters
IAW	In Accordance With
ICBM	InterContinental Ballistic Missile
ICS	Interim Contractor Support
ICT	Integrated Combat Turnaround
ID	Initial Distribution
IETM	Interactive Electronic Technical Manual
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
IOC	Initial Operational Capability
IOS	Interim Operational Supplement
IOT&E	Initial Operational Test & Evaluation
IPB	Illustrated Parts Breakdown
IPDF	Indexed Portable Document Format
IPR	In-Process Review
IPT	Integrated Product (Process) Team
ISS	Interim Safety Supplement
ITO	Instructions To Offerors (contracting) OR Interim Technical Order (TO 00-5-1)
ITPS	Identifying Technical Publication Sheet
IWSM	Integrated Weapon System Management
JCALS	Joint Computer-Aided Acquisition and Logistics Support
JEDMICS	Joint Engineering Drawings Management Information and Control System
JG	Job Guide
JNWPS	Joint Nuclear Weapons Publication System
JTMS	Joint Technical Manual System (subset of the JCALS infrastructure)
LOA	Letter of Agreement
LPO	Lead Project Office

MAJCOM	Major Command
MAP	Military Assistance Program
MEB	Mission Element Board
MIL-PRF	Military Performance Specification
MIL-STD	Military Standard
MIPR	Military Interdepartmental Purchase Request
MNS	Mission Need Statement
MOA	Memorandum of Agreement
MPTO	Methods and Procedures TO
NAVEODTECHDIV	Naval EOD Technology Division
NDI	Non-Destructive Inspection
NGS	Non-Government Standard
NNWDPP	Nonnuclear Weapons Delivery Planning Program
NSA	National Security Agency
O&M	Operation(s) and Maintenance
ODS	Ozone Depleting Substance
OPCERT	OPerational CERTification
OPR	Office of Primary Responsibility
OT&E	Operational Test and Evaluation
PA	Preparing Activity
P&A	Pricing and Availability
PC	Product Center (AFMC)
PCO	Procuring Contracting Officer
PCR	Publication Change Request
PDF	Portable Document Format' (Adobe)
PDR	Preliminary Design Review
PDSM	Product Data Systems Modernization (Program Office)
PID	Program Introduction Document
PMD	Program Management Directive
PTO	Preliminary Technical Order
QA	Quality Assurance
REMIS	REliability and Maintainability Information System
RFP	Request For Proposal
RGL	Reading Grade Level
RSP	Render Safe Procedures
RTO	Responsible Test Organization
SAF	Secretary of the Air Force
SAMP	Single Acquisition Management Plan

SAP	Security Assistance Program
SATODS	Security Assistance TO Data System
SATOP	Security Assistance TO Program
SCG	Security Classification Guide
SDP	Standard Data Package (munitions) OR Source Data Package (EOD)
SERD	Support Equipment Recommendation Data
SGML	Standard Generalized Markup Language
SID	Specification Interpretation Document
SIR	Specification/Standard Interface Record
SM	Single Manager (SPD, MGM, or PGM)
SMR	Source Maintenance Recoverability (Code)
SOO	Statement of Objectives
SOW	Statement Of Work
SPO	System Program Office
SRD	System Requirements Document
SSDP	Standard Source Data Package
S/S/SN	System/Subsystem/Subject Number
SVM	System Verification Manager
T&E	Test and Evaluation
TCM	Technical Content Manager
TCTO	Time Compliance Technical Order
TDY	Temporary Duty
TM	Technical Manual
TMCP	Tactical Missile Control Point (WR-ALC/LKG)
TMCR	TM Contract Requirements (document)
TMSS	TM Specifications and Standards
TO	Technical Order
TOCU	TO Control Unit
TOIS	TO Improvement System
TOMP	TO Management Plan
TOP/RC	TO Planning/Requirements Conference
TORB	TO Review Board
TOVP	TO Verification Plan
TRC	Technology Repair Center
TRD	Technical Requirements Document
USAF	United States Air Force

VSP	Verification Status Page
VTM	Verification Team Manager
WSDP	Weapons Source Data Package
WUC	Work Unit Code
WWW	World Wide Web
6DOF	Six Degree of Freedom

II. Definitions:

Administrative Unit: Administrative personnel assigned to the TOCU to perform clerical duties assigned by the TOMA or designated representative.

Certification: The contractor's written assurance that manuals and source data are current, adequate, accurate, and conform to contract requirements.

Commodity: A designated item, subsystem, or system which is not identified as a weapon or military system. Commodities are grouped into Product Groups or Materiel Groups which possess similar characteristics and applications benefiting from similar developmental, acquisition, and logistics support management processes.

Configuration Control: The systematic evaluation, coordination, and approval or disapproval of all proposed changes in the configuration of a baseline CI, and implementation of approved changes.

Configuration Item (CI): An aggregation of hardware and/or software, or any portion thereof, that satisfies a function and is designated for configuration control. Items that reflect the current approved configuration of military systems and/or commodities currently in the Air Force operational inventory. CIs require the use of the latest TO information listed in the appropriate TO Index.

Contract Maintenance: The maintenance of systems or commodities performed by commercial organizations (including prime contractors) under contract on a one-time or continuing basis without distinction as to level of maintenance accomplished.

Contractor Personnel: Technical publications and/or engineering personnel assigned from the applicable contractor to provide on-site assistance to the TOCU and to function as members of the TORB.

Development System Manager (DSM): The lead individual at a Product Center (PC) when an SM located at an ALC delegates a specific development task to the Product Center. The DSM reports directly to the SM.

Document Type Definition (DTD): DTDs define the structural component tags of a TO in terms of document elements such as titles, paragraphs, tables, graphics, footnotes, etc. A specific DTD defines the structure of a specific type of TO. An SGML TO document is produced by inserting SGML tags into the document's unformatted text, following the rules of the specific TMSS DTD.

Engineering Change Proposal (ECP): An engineering change and the documentation that describes and suggests it. ECPs are submitted to the SM for approval by contractors or from internal Air Force sources.

Equipment Specialist (ES): The individual or position responsible for assisting the acquisition team during the development/production phase and for technical management of a system, subsystem or commodity during the sustainment phase of a program.

Form, Fit, and Function: The physical and functional characteristics of an end item, but not the characteristics of any of the item's components.

Formalization: The process of reviewing a TO for completion of the acquisition process. Verification should have been completed to the maximum extent possible, all corrections must have been made, and an AFTO Form 27 recommending formalization must be completed and signed by the TORB.

Formatting Output Specification Instance (FOSI): A specification instance which "reads" an SGML-tagged file and produces an output properly formatted for the output medium (i.e., print, computer screen, etc.) A separate FOSI is required for each different type of document and each output medium.

Integrated Master Plan (IMP): An event-driven document provided by a contractor as part of the proposal, covering the critical events leading to successful contract completion. Events will be listed with entry and exit criteria (what must happen before the process leading to the event can start, and what must be completed before the event is complete). For example, the event "Deliver TOs" could have an entry criterion of "Complete In Process Reviews," and an exit criterion of "Perform included procedures successfully as written."

Integrated Master Schedule (IMS): The IMS is a CDRL deliverable, updated as required during contract performance, used for managing and tracking completion of program events.

Integrated Product Team (IPT): A team formed to manage and execute an acquisition program, composed of personnel from all activities affected by the product. The TO IPT should consist of the TO Manager, other affected AFMC managers, using command and other support agency representatives, and contractor personnel involved in the development and delivery of TOs.

Integrated Weapon System Management (IWSM): Empowering a single manager (SM) with authority over the widest range of military system program decisions and resources to satisfy customer requirements through the life cycle of that system. This is the AFMC management philosophy for all military systems and commodities.

Major Command (MAJCOM): The activity at the higher echelon responsible for management and command control

Materiel Group: A Materiel Group consists of those systems, subsystems and items which do not fall into the categories of Weapon or Military Systems or Product Groups. They are primarily differentiated from Product Group assets in that they do not require a standing development capability. Materiel Groups are normally assigned consolidated sustainment management to achieve economies of scale and specialization of technical and engineering expertise.

Materiel Group Manager (MGM): The single manager for a Materiel Group, who has the same responsibilities as a System Program Director or Product Group Manager for the assigned materiel. The MGM's products are in direct support of one or more SPDs.

Military System: The generic phrase used to describe the systems developed and supported by AFMC and to which IWSM is applicable. The specific definition is: A discrete stand-alone collection of systems and related resources which, in conjunction with user support and operation, provides a capability to accomplish a specific military mission.

Non-Government Specifications (NGS): Specifications and standards developed and maintained by commercial interests. They may be cited on contracts when there are no government performance specifications (MIL-PRF). Any NGS proposed for development of TOs must be approved by Det 2, ESC/AV-2.

Organic Maintenance: Maintenance performed by the government under military control, using government-owned or controlled facilities, tools, test equipment, spares, repair parts, and military or civilian personnel.

Performance Specification: Specifications limited to defining Form, Fit, Function and Interface (F3I), without defining or limiting processes, procedures and methods used to achieve the end result.

Preliminary Technical Orders (PTOs): PTOs are in-work drafts of TOs from initial assignment of TO numbers until they are formalized. PTOs are assigned a TO number and are identified by a warning and the word "PRELIMINARY" on the title page ; they will contain a Verification Status Page (VSP) (MIL-STD-38784).

Preparing Activity (PA): The organization or activity responsible for developing and publishing specifications, standards and DIDs. The PA for AF TMSS is MSG/ILJ.

Pre-publication Review: A final review of a TO, prior to reproduction, to ensure that all verification comments are included and the TO conforms to all specification and contract requirements. The TOMA and designated representatives from the using and supporting commands, verification team, and contractor will comprise the review team. Members should have technical background in the area covered by the manual(s) under review. Familiarity with the specific hardware being covered is desirable.

Prime ALC: The Air Logistics Center where the SM's sustainment function is located.

Product Group: Aggregations of multiple products in all life cycle phases characterized by an ongoing development requirement as well as a much larger cumulative sustainment requirement. A Product Group consists of commodities which can benefit from common management practices.

Product Group Manager (PGM): The single manager for a Product Group, who has the same responsibilities as a System Program Director or Materiel Group Manager for the assigned products. The PGM's products are usually in direct support of one or more SPDs.

Publication Change Requests (PCRs): Recommendations submitted on AFTO FORMs 22, 27 or 158 for improvement of TOs or PTOs. PCRs for flight manuals are submitted on AF Forms 847. PCRs are divided into the three categories of Emergency, Urgent and Routine specified in chapter 9.

Quality Assurance (QA): QA is the process by which the contractor and government ensure TOs and source data are technically accurate, adequate, safe and readily understandable. The contractor's QA program will be specified in the Integrated Master Plan. The primary government QA process is verification (chapter 7). QA may include process controls which include actual task performance, simulation (when performance could cause hazards to personnel or equipment) or desk-top analysis (for non-procedural data).

Single Manager (SM): The generic term including System Program Directors, Materiel Group Managers, and Product Group Managers (see definitions).

Standard Generalized Markup Language (SGML –MIL-PRF-28001): SGML is a computer processable syntax for describing the logical and content structures of a document. Using an SGML document type definition, a specification can rigorously and strictly define the structure of a class of documents such as job guides, flight manuals, fault isolation procedures, etc. SGML describes the format and structure of the text in a document, not how it will appear as an output. A FOSI is required to build an output presentation for a particular SGML document. Perhaps the most attractive feature is that documents coded with SGML can be output in many different ways without conversion or manual intervention with the data.

System: A final combination of equipment items, technical data, supply support, transportation, policies and procedures which make up a self-sufficient entity designed to perform a specific mission.

System Maturity. System maturity occurs during the "Production, Fielding/Deployment & Operational Support" phase when the system design is stable and management emphasis changes from the acquisition to the sustainment function.

System Program Director (SPD): The individual in a SPO who is ultimately responsible and accountable for decisions and resources in overall program execution. The single face to the user who oversees the seamless process. SPD is the designated title for the single manager of a program that reports to a Program Executive Office (PEO) at Air Staff or a Designated Acquisition Commander (DAC) under an ALC or PC/CC.

System Program Office (SPO): The integrated AFMC organization responsible for cradle-to-grave management of a military system.

System Support Manager (SSM): The lead individual at the ALC responsible for support when the SM is located at a PC. The SSM reports directly to the SM.

System Verification Managers: Personnel assigned to manage the verification of specific functional area TOs for the TOMA or VTM.

Technical Content Manager (TCM): The individual or office responsible for the accuracy, adequacy, modification, classification and review of TO procedures, engineering data and the related technical contents of a TO.

Technical Repair Center (TRC): The Air Logistics Center (ALC) responsible for depot maintenance of a weapon system or its components.

TO Manager: The individual or organization responsible for managing TOs related to systems and commodities assigned according to TO 00-25-115. Management encompasses all activities from acquisition through disposal of TOs after the systems or commodities they support exit the Air Force inventory. TO Managers are generally responsible for style and format or other non-technical aspects of manuals. The functions of "TCM" and "TO Manager" may be merged as the managers are decentralized into SM organizations.

TO Management Plan (TOMP): The government plan for management of all facts of a major acquisition's TO program. Less-than-major programs may not require a TOMP.

TORB/FTORB: The review boards responsible for evaluation and approval of suggested changes to TOs and flight manuals. They may be formal panels or a loosely structured group of qualified individuals, but must be instituted and empowered by SM letters of appointment.

Updates: Any changes to TOs or PTOs based on approved Publication Change Requests (PCRs). Updates are distributed to users in TO changes, revisions, and supplements according to TO 00-5-1.

Verification: Verification is the process through which Air Force personnel evaluate and prove TOs are accurate, adequate, safe, and usable to support the using command's operational and maintenance concepts. TO procedures shall be performed using the appropriate production hardware to determine if the PTO is suitable for transition to a formal TO. Verification is required by the Department of Defense for all organic TMs. Verification, and the TO Verification Plan, are not required for CLS programs.

Verification Status Page (VSP): A VSP shall be included in preliminary TOs to list all procedures requiring verification, and shall conform to the requirements of MIL-STD-38784. On PTOs that are 100% verified, the VSP may be blank, but will indicate the current date of the TO and any changes. The VSP will also be included in formal TOs containing unverified procedures.

Verification Team: Personnel assigned from various participating commands to verify procedures and to participate in the TORB/FTORB when required. Team members should include personnel of the lowest skill level who will perform the procedures in the operational units.

Verification Team Manager: The individual assigned the task of managing a verification effort, responsible for the verification of assigned system TOs as chartered by the TOMA. The VTM shall be provided by the using command.

APPENDIX B

GENERIC TECHNICAL ORDER MANAGEMENT PLAN (TOMP)

UNITED STATES AIR FORCE

(WEAPON SYSTEM)

TECHNICAL ORDER MANAGEMENT PLAN

ORGANIZATIONAL / INTERMEDIATE / DEPOT

NOTE

1. The TOMP is an important management tool which is mandatory for major programs (TO 00-5-3, paragraph 3-3.5) and should be considered for ALL programs. The generic TOMP provided herein may be tailored and used for any program. A program-specific TOMP containing these requirements may be developed separately.

2. Paragraph numbering is in ATOS-compatible format in this Appendix. For actual use, delete the "B" in front of each number.

PREPARED BY:

DATE:

REV:

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B-1 INTRODUCTION.

This plan describes the management approach to acquire Technical Orders (TOs) for the ___(W/S)___ program. The plan amplifies the TO portions of the Single Acquisition Management Plan (SAMP). It outlines management responsibilities, program establishment, program guidelines, implementation procedures and initiatives. It was developed by the TO Manager, (Office Symbol), in coordination with (add participating organizations) and is based on the most current information available at the time of publication.

B-2 POLICY.

___(W/S)___ TOs will be acquired in the most economical manner without sacrifice of accuracy, quality or adequacy. All TOs will be developed and tailored to meet the needs of the user. The TO Manager is the Single Manager's (SM's) focal point on all TO matters.

B-3 PURPOSE.

This plan provides management policy, assigns responsibilities, defines terminology and specifies procedures for the ___(W/S)___ TO Acquisition Program. This plan provides basic instructions for development, contractor Quality Assurance (QA), verification and formalization of ___(W/S)___ TOs during the program acquisition phase, and maintenance of the TOs after formalization. This plan applies to all acquisition activities, including those at using command bases, Product Centers, ALCs and contractor/subcontractor facilities. This plan was developed in accordance with requirements of TO 00-5-3.

B-4 PROGRAM SUMMARY.

B-4.1 Weapon System Description. (Insert the appropriate description of your weapon system).

B-4.2 Operational Concept. (Insert the approved concept of operations for your weapon system).

B-4.3 Maintenance Concept. (Insert the approved concept of maintenance for your weapon system).

B-5 REFERENCE MATERIAL.

(See table 1-1, TO 00-5-3) *

* Tailor to add additional references as required, to include program management documents, DOD, AF and AFMC Directives and Instructions, TOs, and TM Specs and Criteria.

B-6 DEFINITIONS.

(see TOs 00-5-1 & 00-5-3) (Add definitions as required.)

B-7 RESPONSIBILITIES.

(Tailor as required)

B-7.1 TO Manager. The TO Manager will:

B-7.1.1 Prepare and distribute a draft TOMP and TO program inputs to the RFP to all organizations associated with the _____ system acquisition program as required by TO 00-5-3.

B-7.1.2 Call and chair the TO Planning/Requirements Conference with representatives from the using command, ALC, and other affected agencies to finalize and approve the TOMP and initial RFP/contract inputs for TO acquisition. These participants constitute the initial membership in the TO Integrated Product Team (IPT). After contract award, the contractor's representatives will become part of the team. Review TM performance specifications and standards (TMSS) for operational compatibility and adequacy to support program acquisition. Ensure special or unique requirements (TO 00-5-3, chapter 3) are included in the contract. Following the conference, provide input as required to the program Statement of Objectives (SOO), Instructions to Offerors (ITO) and Evaluation Criteria, partly-tailored TMCR and CDRL for the RFP.

B-7.1.3 Participate in source selection and proposal reviews, and contract negotiations if required. Ensure the final contract meets all requirements of the RFP regarding TOs.

B-7.1.4 Conduct and chair all TO conferences, meetings, reviews, and other joint agency efforts related to the program during acquisition. Ensure all participating organizations are invited as far in advance of scheduled reviews as possible. Request organizations to provide the same personnel to participate in

reviews, thus ensuring continuity of effort. (Requirements for AF review team personnel are prescribed in TO 00-5-3, chapters 6 & 7.) Arrange for Contracting Officer representation during guidance conferences and meetings where it is anticipated that contract scope matters will be discussed. Ensure copies of specifications, exhibits, directives, policy documents, and other references are furnished in sufficient time to allow familiarization by the participants prior to the review.

B-7.1.4.1 Develop an event-phased schedule with the contractor for review of TOs.

B-7.1.4.2 Ensure that the contractor records and distributes minutes of meetings, noting all required actions and responsible agency action, and takes necessary action to effect required changes.

B-7.1.4.3 At IPRs, ensure manuals being reviewed comply with all contractual requirements, applicable specifications, criteria, exhibits, maintenance plans, provisioning and source coding actions. Clarity, reading grade level of writing, consistency, adequacy, and accuracy will be stressed.

B-7.1.5 Arrange for government participation in the contractor's QA program.

B-7.1.6 Establish and chair the Technical Order Review Board (TORB).

B-7.1.7 Establish and manage a verification program by:

B-7.1.7.1 Requiring identification and submission of those organizational level operational and maintenance tasks on mission equipment that must be verified prior to releasing the TOs to the operating command. This same procedure shall also be followed on intermediate and depot level TOs making use of complex support equipment on advanced technology subsystems/commodities.

B-7.1.7.2 Developing, coordinating, and publishing, in conjunction with all participating commands and affected agencies, a detailed verification plan not later than 120 days prior to the start of the first scheduled verification. The coordinated and approved plan will become an appendix to this document.

B-7.1.7.3 Developing basic requirements and schedules to ensure that TOs are verified, corrected, and published in time to permit the distribution of verified preliminary or formal TOs to operating units before or concurrent with delivery of the system/commodity.

B-7.1.7.4 Requesting technically qualified personnel from the operating and supporting commands to accomplish the verification. Coordinate the verification effort with the contractor and arrange for contractor support as required.

B-7.1.7.5 Informing all activities directly concerned with verification as far in advance as possible when each verification effort will begin.

B-7.1.7.6 Appointing a Verification Team Manager to ensure that:

B-7.1.7.6.1 Support equipment is available to support the verification.

B-7.1.7.6.2 Necessary hardware (i.e., test equipment, support equipment, consumables and inert munitions) is available to support the verification.

B-7.1.7.6.3 Instructions can be used to operate and maintain the system and/or commodity.

B-7.1.7.6.4 Information reflects the latest configuration of the system and/or commodity delivered to the user.

B-7.1.7.6.5 Current safety criteria are met.

B-7.1.7.6.6 Updates are accomplished on a "fast reaction" basis (TO 00-5-3, chapter 8) and restricted to those of a technical nature which affect accuracy of operations and maintenance procedures. Editorial updates will be made only when they definitely affect understandability.

B-7.1.8 Conduct post-publication reviews as determined necessary.

B-7.1.9 Place follow-on requirements on contract.

B-7.1.10 Provide a status report of scheduled TO events.

B-7.2 Using Command(s) (specify) will:

B-7.2.1 Assist the TO Manager by verifying that arrangement of material and method of presentation are commensurate with the established maintenance concept, skills and training of personnel who will operate and maintain the equipment.

B-7.2.2 Provide qualified personnel as requested by the TO Manager to support TO reviews and verifications. Personnel must have signatory authority for on-site decisions. If the MAJCOM cannot provide this function, it must delegate the authority to the TO Manager or to command assets assigned to the test activity or operating wing to preclude delays in TO development. During early contractor guidance conferences and 50% or less in-process reviews, support should be 7 – 9 level enlisted personnel or civilian equivalent. For higher IPRs and membership on the verification team, personnel should be of the lowest grade and skill level (5-level minimum) expected to operate the equipment, as well as the representative(s) who attended the other reviews.

B-7.2.3 Provide other support required for verification of TOs in accordance with plans and schedules established by the TO Manager.

B-7.2.4 Report safety or personnel hazard conditions to the TO Manager.

B-7.2.5 Continually review preliminary TOs to detect errors, deficiencies, and obsolete or nonessential material and report problems to the TO Manager.

B-7.2.6 Identify TOs which require post-publication reviews to the TO Manager.

B-7.3 Air Logistic Centers (ALCs), will:

B-7.3.1 When NOT the acquisition agency, assist the acquisition TO Manager as requested to ensure adequacy of established TO development program.

B-7.3.2 Attend in-process reviews, verification and pre-publication reviews in accordance with jointly-established schedules, providing guidance throughout the development cycle to facilitate transition of adequate, timely, economical and operationally suitable TOs at system maturity.

B-7.3.3 Continually review preliminary TOs to detect errors, deficiencies, and obsolete or nonessential material and report problems to the TO Manager.

B-7.3.4 Perform using command functions for depot manuals.

B-7.3.5 Identify TOs which require post-publication reviews to the TO Manager.

B-7.4 Air Education and Training Command (AETC) will:

B-7.4.1 Continually review preliminary TOs to detect errors, deficiencies, and obsolete or nonessential material and report problems to the TO Manager.

B-7.4.2 Furnish necessary assistance to the TO Manager for review efforts and verification of TOs.

B-7.4.3 Perform using command functions for TOs on training systems or commodities acquired for AETC.

B-7.5 (Add other affected units as required: see TO 00-5-3, chapters 3 and 12)

B-8 SCOPE OF TECHNICAL ORDER REQUIREMENTS.

B-8.1 General: The TO Manager establishes overall TO program guidance through coordination with users and support agencies, and retains TO management responsibilities until program transition to the ALC (if applicable) at system maturity. TO management decisions will be based on operational needs and budget constraints.

B-8.2 TOs To Be Developed: There are (#) families of TOs to be developed for the (W/S). Their general characteristics and structure are as follows:

B-8.2.1 Operations Manuals: Manuals providing operation and use instructions, such as Flight Manuals.

B-8.2.2 Organizational Level Manuals: The organizational level manuals provide instructions in Job Guide format for on-equipment maintenance at the field level.

B-8.2.3 Intermediate/Depot Level and Engine Maintenance Manuals: These manuals contain instructions in Work Package format for off-equipment maintenance to be performed in the field and at the ALCs.

In those instances where depot level instructions are identical to intermediate level, they will not be duplicated in depot level work packs.

B-8.2.4 Illustrated Parts Breakdowns (IPBs): IPB manuals provide instructions for identifying and requisitioning of parts and for illustrating assembly and disassembly relationships.

B-8.2.5 Support Equipment (SE) Manuals: The SE manuals contain operation and maintenance instructions for all levels of maintenance. When the page count is less than 800 page units, these manuals will also contain the IPB-

B-8.2.6 Training Equipment Manuals: The training equipment manuals contain the instructions for all levels of maintenance and operation of training systems.

B-8.2.7 Software Manuals: These manuals provide instruction on operation, troubleshooting, loading, etc. for installed software.

B-9 ACQUISITION PROCESS.

B-9.1 Segment Efforts: The (W/S) TO effort is segmented as follows: (Tailor as required)

SEGMENT	TO EFFORT
PHASE I	Flight-Test-Required TOs
PHASE II	Remaining O&M Manuals
PHASE III	Illustrated Parts Breakdown
PHASE IV	Depot Level Manuals

B-9.2 Delivery Options: See TM-86-01.

B-9.3 TO Preparation:

B-9.3.1 Development Flow. The TOs will be developed from data in Supportability Analysis Reviews, design data specifications, schematics, engineering drawings, engineering reports, vendor data, engineering assembly and test procedures, manufacturing engineering procedures, support equipment procedures, and other TOs. At the TO Guidance Conference, all agencies involved in the TO program must ensure the contractor understands Air Force needs and requirements. The basis for requirements will be the IMP, SOW, TMCR, CDRLs, MILSPECs and criteria, maintenance concept, skill levels of personnel using the TMs and support capabilities.

B-9.3.2 Specification Interpretation, Deviations, and Waivers. Approved Specification Interpretation Documents (SIDs) and requests for deviations or waivers (TM-86-01) will be made a part of the contract by modifying the Specification/Standard Application Record (SAR) for the applicable MILSPEC.

B-9.3.3 Reviews: All reviews will be chaired by the TO Manager or a designated representative, with participation by all affected agencies as determined by the TO Manager. The prime contractor will host reviews when directed by the TO Manager, including those for any subcontractor-prepared manuals.

B-9.3.3.1 In-Process Reviews (IPRs) are conducted to evaluate the contractor's progress, their understanding of contractual requirements and to make sure TOs are being prepared in accordance with applicable specifications. In addition, guidance may be given concerning TO technical content, data that requires amplification, missing data and standardization of data. IPRs will be conducted as specified in the contract. The objective of IPRs will be to:

B-9.3.3.1.1 Minimize deficiencies in delivered data resulting from failure of the preparing activity to fully and clearly understand contract/program requirements, the Air Force maintenance concept, Air Force policy and user capabilities/needs.

B-9.3.3.1.2 Identify deficiencies while corrective action is economical and can be accomplished without adverse effects to delivery schedules.

B-9.3.3.1.3 Assure the completion of manuals which meet quality requirements in terms of accuracy, adequacy, completeness, usability and compatibility with approved maintenance plans and support equipment.

B-9.3.3.2 Pre-publication Reviews will be conducted (if required) prior to preparation of the TO masters for formal delivery to verify inclusion of verification comments and as a final check on contract compliance.

B-9.3.3.3 Post-Publication Reviews are conducted after TOs have been delivered to the using command to evaluate and correct the instructions contained in the TOs. The need to conduct a Post-Publication Review will be determined by the TO Manager based upon equipment modifications, AFTO Forms 22 or 847 received, and using command or TCM ecommendations.

B-9.3.3.4 Results of all reviews will be documented by minutes and a master markup copy of the TOs.

B-9.3.4 Quality Assurance: TO QA is the responsibility of all personnel involved in the development effort. The government will participate in the contractor's QA program and vice versa.

B-9.3.4.1 The QA program will be in accordance with the contract.

B-9.3.4.2 Schedules for QA checks must provide for sufficient time to incorporate any corrections or comments prior to the scheduled start of verification on the procedures or TOs checked.

B-9.3.4.3 When allowed in the contract, the contractor may certify manuals and source data, instead of performing more detailed Quality Assurance checks.

B-9.3.5 Verification: Verification is the Air Force evaluation of TO adequacy and accuracy. It is imperative that all agencies and organizations involved provide the support required. The general guidelines for verification are:

B-9.3.5.1 The initial effort will concentrate on TOs required for flight test (priority listing in TO 00-5-3, chapter 7).

B-9.3.5.2 All PTOs will contain a VSP to identify unverified functions, tasks, or procedures, and provide warnings on their use. The VSP will be continuously updated by annotating the page in the master markup TO copy following each verification effort. The contract will require updated VSPs with each change or revision issued.

B-9.3.5.3 The process of verification will be accomplished on a scheduled basis in accordance with the TOVP (TO 00-5-3, Appendix C) developed by the TO Manager in conjunction with the using and supporting commands and the contractor. The verification activities will be scheduled far enough in advance (minimum of 30 days) to allow participation by all agencies.

B-9.3.5.4 Verification can begin only after a procedure/data has been contractor certified. Notification of manual or procedure completion will be provided by the respective contractors to the TO Manager. The TO Manager or VTM will coordinate availability of required assets to support the verification.

B-9.3.5.5 The contractor will provide on-site engineering and technical publication representation during all verification efforts in accordance with the contract. The representative will maintain a master copy of the procedure/data being verified. The master copy will be used to record recommended changes during verification. A copy of the corrected master will be retained by the verification team and a copy will be sent to the *[TO Manager] [TORB].

*: Tailor as required.

B-9.3.5.6 Concurrent contractor testing and verification will be permitted in accordance with TO 00-5-3.

B-9.3.5.7 The manuals will remain PTOs until determined both accurate and adequate by the TORB, who will recommend formalization to the TO Manager. During the period after verification TO discrepancies will be reported as specified by the TO Manager (TO 00-5-3).

B-9.3.6 Classified Data Control. Classified material and equipment will be handled in accordance with DOD 5200. 1-R/AFI 31-401, Information Security Procedures Regulation, and DOD 5220.22-R/AFI 31-601, Industrial Security Procedures. If any Air Force activity has reason to believe that security considerations support the reclassification or declassification of a specific TO, the activity will report the discrepancy in accordance with procedures outlined in AFI 31-401.

B-9.3.7 Configuration Control. To ensure that the user is provided both accurate and adequate information to operate and maintain the ___(W/S)___ and support equipment, it is imperative that the following measures be applied.

B-9.3.7.1 The contractor shall continuously monitor and provide information to the TO Manager on all configuration changes to the military system and support/test equipment.

B-9.3.7.2 The TO Manager will work closely with the contractor(s) to ensure TO QA and verification are accomplished on production configured systems and commodities.

B-9.3.7.3 Deviations will be permitted only where like systems/commodities do not effect operations and maintenance procedures being checked or verified. In these cases approval to use other than production configured systems or commodities must be coordinated between the TO Manager, using command and supporting agencies.

B-9.3.8 Updates and Update Incorporation.

B-9.3.8.1 Updates resulting from In-Process Reviews will be incorporated prior to the next scheduled review.

B-9.3.8.2 Updates resulting from contractor QA procedures will be incorporated prior to delivery of PTOs for verification.

B-9.3.8.3 Updates resulting from Air Force verification will be incorporated by the contractor(s) prior to preparation of formal TO reproduction media.

B-9.3.9 Formalization. When verification is completed, the Verification Team will complete an AFTO Form 27 to document any TO discrepancies and recommend either further verification or formalization of the TO. The AFTO Form 27 will be sent to the TO Manager (or TORB/FTORB) for review, coordination and approval. Approved AFTO Forms 27 will be sent to the contractor for update of the TO, and if applicable, preparation of formal copies. Upon formalization of the PTO, the VSP will be removed unless some portion of the TO could not be verified (example: wing removal and replacement). The VSP for formal TOs must identify all procedures/tasks/paragraphs within the TO that have not been verified and must contain instructions for accomplishing and reporting verification by field units in accordance with TO 00-5-1, chapter 1.

B-9.4 Maintenance of TOs: The maintenance of TO accuracy is the responsibility of the TO Manager. During the acquisition phase, this is usually through a contract with the prime contractor. The update schedule will be specified in the TMCR.

B-9.5 Management of Time Compliance TOs (TCTOs). TCTOs required in support of the (program) will be managed by the *[TO Manager] [Data Manager] according to TO 00-5-15 and AFMCI 21-301.

*: Tailor as required.

B-9.6 Schedules: The schedules for the TO acquisition process are dependent upon overall program schedules and the availability of support equipment, hardware, and personnel needed for TO development, review and acceptance.

B-9.7 Financial Plan: The (W/S) SM will budget for TO support from other organizations in accordance with AFI 65-601V1. It is the responsibility of all organizations to project their budget requirements by developing and submitting a TO Requirements Plan (TORP) according to the TO Requirements Guide (TORG; Financial Manager's Handbook, Chapter 85).

APPENDIX C

GENERIC TECHNICAL ORDER VERIFICATION PLAN (TOVP)

UNITED STATES AIR FORCE
(MILITARY SYSTEM)
(DESIGNATION)
TECHNICAL ORDER VERIFICATION PLAN (TOVP)
ORGANIZATIONAL / INTERMEDIATE / DEPOT

NOTE

1. The TOVP is mandatory for ALL TO acquisition programs, unless otherwise justified in writing and approved by the SM. The generic TOVP provided herein may be tailored and used for any program. A program-specific TOVP containing these requirements may be developed separately.

2. Paragraph numbering is in ATOS-compatible format in this Appendix. For actual use, delete the "C" in front of each number.

PREPARED BY: (spo)

DATE:

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C-1 INTRODUCTION. This plan establishes policy, defines terminology, assigns responsibility, and specifies schedules for the Air Force (Military System) TO Verification Program. This plan will apply to all verification activities, including those at using command bases, remote sites, depots, and contractor facilities. This plan was developed in accordance with TO 00-5-3, Chapter 7.

C-2 PURPOSE. The purpose of this plan is to establish Air Force objectives, requirements, responsibilities, schedules and procedures for the (W/S) TO Verification program.

C-3 SCOPE. This plan will apply to the verification of contractor-approved *Organizational, *Intermediate, *Field and/or *Depot Preliminary TOs (PTOs) for the (W/S) and associated support equipment during *Development Test and Evaluation (DT&E), *Initial Operation Test and Evaluation (IOT&E), *Follow-On Test and Evaluation (FOT&E), *Operational Base Activation, and *Depot Activation.

*: Tailor as necessary

C-4 REFERENCES: See Technical Order Management Plan (TOMP), paragraph 5. (add any required.)

C-5 ANNEXES:

A1 (thru A(n))* List of ( ) TOs.

* There may be "n" number of annexes, as required to identify groupings of TOs by verification type, location, etc.

C-6 VERIFICATION PLAN GENERAL PROVISIONS.

C-6.1 General: This plan establishes the management relationships between the (SM Office Symbol) and *(list Other Participants). Military system, subsystem, support equipment, weapons and munitions, and depot TO verifications shall be managed in accordance with applicable references and this plan.

*: Tailor as necessary

C-6.2 Organizational Structure:

C-6.2.1 Overall TO acquisition team organization (TO Manager, SM, User, CTOCU/TOCU, Verification Team, TORB/FTORB, etc.)

C-6.2.2 CTOCU/TOCU composition, location, and organization.

C-6.2.3 Verification team membership, location(s).

C-6.2.4 TORB/FTORB membership, location.

C-6.3 Definitions: See TOMP paragraph 6; add any required.

C-6.4 Policy: Overall verification policy is specified in TO 00-5-3. Unless otherwise specified by the TO Manager, the VTM or designated representative has the authority to chair all verification meetings in accordance with approved schedules and this document. The goal is one hundred percent verification of all procedures prior to initial deployment of the system/commodity. Verification of task-type procedures shall be accomplished on contractor-tested or certified data by performance unless otherwise authorized by the TO Manager. The CTOCU/TOCU and verification team are under the operational control of the TO Manager. The VTM shall report directly to (Office Symbol). All PCRs and verification changes shall be reviewed and approved/disapproved by the TORB/FTORB; approved changes will be sent to the contractor for incorporation.

C-6.4.1 Verification can begin only after procedures/data have been certified by the contractor.

C-6.4.2 Prior to scheduling a verification effort, the VTM shall ensure that all required assets (equipment, SE, tools, supplies, personnel, and facilities) are available for the verification. The TO Manager shall notify all participants of the scheduled verification.

C-6.4.3 Verification by actual performance shall be accomplished on all procedural data to the maximum extent possible; however, procedures which would activate one-time devices such as squibs and EEDs, or could result in equipment degradation or damage and/or personnel injury (such as certain emergency procedures) may be verified by simulation or desk-top analysis. Troubleshooting procedures requiring destructive action or removal and replacement of soldered components solely for demonstration/verification shall not be accomplished by performance unless directed by the TO Manager.

C-6.4.4 Illustrated parts breakdowns (IPBs), theory of operation, and other non-procedural data may be checked by desk-top analysis during IPRs.

C-7 RESPONSIBILITIES:

C-7.1 TO Manager:

C-7.1.1 Provide overall management for the acquisition of TOs required for the operation and maintenance of the military system and associated commodities.

C-7.1.2 Update this plan as required.

C-7.1.3 Initiate agreements with the using command and support activities to resolve all TO difficulties in a timely manner.

C-7.1.4 Ensure that TOs are available to support the deployment of the (W/S) and associated commodities.

C-7.1.5 Monitor the activities of the CTOCU/TOCU and verification team to ensure that verification is proceeding on schedule.

C-7.1.6 Ensure that all necessary TOs and assistance are available, as required, to accomplish the complete verification effort.

C-7.1.7 Support the CTOCU/TOCU and VTM by ensuring all resources required for verification are scheduled and available.

C-7.1.8 Approve/disapprove recommendations for updates that the TORB/FTORB cannot resolve.

C-7.1.9 Provide disposition on TORB/FTORB recommendations which impact the contract.

C-7.1.10 Approve transition of PTOs to formal TOs based on TORB/FTORB recommendations.

C-7.2 Central Technical Order Control Unit: (if used) **NOTE:** TOCU duties are delegated from the CTOCU, and are usually limited to a single location.

C-7.2.1 Participate with the contractor in TO QA programs. Serve as the verification management and control agency.

C-7.2.2 Review PCRs for technical content, format, quality, and specification compliance.

C-7.2.3 Identify which assets are suitable substitutes for use during verification effort.

C-7.2.4 Receive and file TOs and contractor data.

C-7.2.5 CTOCU Processing of PCRs. The following time elements shall be used in the processing of PCRs submitted:

C-7.2.5.1 Emergency PCR. The CTOCU shall assign the PCR control number, log the PCR, and schedule an Emergency TORB/FTORB- An Interim TO (ITO) shall be issued by the contractor or CTOCU within 48 hours for TORB/FTORB-approved PCRs.

C-7.2.5.2 Urgent PCR. The CTOCU shall process the urgent PCR in the same manner as the emergency PCR except for the time element. An ITO shall be issued by the contractor or CTOCU within 15 days for TORB/FTORB-approved PCRs.

C-7.2.5.3 Routine PCR. The CTOCU shall assign the PCR control number, log the PCR, reproduce and distribute the PCR to all TORB/FTORB members. The CTOCU shall then schedule the PCR for review at the next scheduled TORB/FTORB.

C-7.2.5.4 Transmitting Approved Changes to Contractor(s). TORB/FTORB-approved PCRs shall be transmitted to the contractor(s) by the CTOCU in accordance with the contract.

C-7.3 Administrative Unit: (Part of the CTOCU, if used)

C-7.3.1 Provide clerical support.

C-7.3.2 Keep an accurate up-to-date record of AFTO Form 22s, 27s, 158s, and AF Form 847s by control numbers and reflect approved/disapproved status.

C-7.3.3 Prepare copies of PCRs and distribute to TORB/FTORB members prior to consideration by the TORB/FTORB.

C-7.3.4 Perform duties specified by the TO Manager or representative.

C-7.4 Verification Team Manager (VTM):

C-7.4.1 Implement this TO Verification Plan (TOVP) as it affects all __(W/S)__ and support equipment TOs.

C-7.4.2 Serve as the focal point on all TO verification matters.

C-7.4.3 Assist TO Manager as test site liaison as applicable.

C-7.4.4 Determine if all required systems, munitions, support/special equipment, and personnel are available to support each verification task listed on the TO verification schedule.

C-7.4.5 Convene pre-verification meetings to plan actions and assign taskings.

C-7.4.6 Supervise TO verification to ensure maximum completion of TO verification prior to formalization.

C-7.4.7 Convene a post-verification meeting to discuss and resolve discrepancies.

C-7.4.8 Supervise the generation of PCRs resulting from verification and forward them to the CTOCU/ TORB/FTORB.

C-7.4.9 Prepare a monthly report showing the current status of the TO verification effort and forward one copy of this report to the TO Manager and designated offices.

C-7.4.10 Chair meetings when requested as the TO Manager representative.

C-7.5 System Verification Manager (SVM). Under direction of the VTM:

C-7.5.1 Supervise and perform verification on specific subsystem or functional area TOs.

C-7.5.2 Coordinate locally the availability of support/special equipment, systems, munitions, and personnel for verification.

C-7.5.3 Assemble the system verification team for each verification.

C-7.5.4 Keep accurate, up-to-date records showing exactly which procedures/data of assigned TOs have been verified and any problems existing with the verified data.

C-7.5.5 Generate PCRs to correct discrepancies.

C-7.6 Technical Order Review Board (TORB):

C-7.6.1 The TORB shall conduct meetings as scheduled by the TO Manager to take action on PCRs as follows:

C-7.6.1.1 Review and approve/disapprove recommended updates.

C-7.6.1.2 If technical assistance is required, forward the PCR as necessary for engineering/policy evaluation. After evaluation, the recommendations shall be returned to the TORB for action.

C-7.6.1.3 Return reviewed PCRs to the CTOCU for disposition.

C-7.6.2 Board members shall be prepared to discuss recommendations when the board convenes. Members or the chairperson may bring advisors who can contribute to the consideration of a recommendation.

C-7.6.3 Emergency and urgent PCRs shall be processed immediately on receipt, by telecon if necessary.

C-7.6.4 The TORB will recommend formalization of PTOs after verification has been completed to the maximum extent possible.

C-7.6.5 The TORB will review all TO revisions and/or changes to ensure outstanding AFTO Form 22s, 27s, 158s and AF Form 847s are accurately incorporated.

C-7.7 Flight TORB (FTORB): The FTORB performs the same functions as the TORB for Flight Manuals Program manuals. It must include at least three flight-rated members (AFI 11-215).

C-7.8 Contractor Personnel:

C-7.8.1 Provide a representative to the TORB/FTORB who has contractor signature authority for technical updates.

C-7.8.2 Provide necessary support personnel at verification site(s).

C-7.8.3 Review each PCR before it is discussed by the TORB/FTORB and be prepared to present the contractor position on the proposed update.

C-7.8.4 Assist in resolving problems with contractor equipment or TOs as a member of the TORB/ FTORB.

C-7.8.5 Prepare TO updates as required.

C-7.8.6 When directed by the TO Manager, prepare one TOPS page for each TO page requiring update. Prepare an updated TOPS index page concurrently with each TOPS, change or revision to the TO.

C-7.9 Using and Participating Agencies: See TOMP, paragraph 7. (If there is no TOMP for the program, add responsibilities here.)

C-8 PROCEDURES FOR VERIFICATION:

C-8.1 The TO Manager, VTM and contractor representative shall establish verification schedule times based on availability of contractor-approved PTOs, systems, support/special equipment, munitions, and personnel.

C-8.2 During the performance of the verification effort, the verification team shall perform tasks in accordance with appropriate TOs and the following instructions:

C-8.2.1 Read aloud the step to be performed.

C-8.2.2 Perform the step.

C-8.2.3 Note discrepancies in the Air Force master copy of the TO.

C-8.2.4 The contractor/writer shall note discrepancies in the contractor's master copy and shall advise and assist in the preparation of PCRs to correct the discrepancies.

C-8.2.5 Participating agency representatives shall coordinate on discrepancies and corrective actions during the post-verification meetings.

C-8.2.6 Contractor (writer) shall use the master copy and the TORB/FTORB-approved PCR to incorporate the recommended updates in the TO.

C-8.2.7 The CTOCU shall maintain a master copy of the TO and TO updates from the contractor. A new PCR shall be submitted to the contractor when verification comments are not fully incorporated or adequately rebutted.

C-8.3 The CTOCU shall take action on PCRs as follows:

C-8.3.1 TORB/FTORB approved changes and recommendations for improvements shall be forwarded to the contractor.

C-8.3.2 Disapproved recommendations shall be returned to the originator with reason for disapproval.

C-8.3.3 Unresolved or contractual issues shall be sent to the TO Manager for disposition.

C-8.4 When a PTO is determined to be suitable for use, the TORB/FTORB shall approve or disapprove the AFTO Form 27 recommendation and send the form to the TO Manager. The CTOCU or TORB/FTORB shall advise the TO Manager on the need for a pre-publication review.

C-9 ADMINISTRATIVE PROCEDURES.

C-9.1 PCR and Comment Sheet Control and Tracking: A PCR and Comment Sheet control/tracking log shall be established by the CTOCU AU. The control log must include the date the PCR or Comment Sheet is forwarded to the contractor and the date of final disposition or incorporation into the TO. PCR control numbers (AFTO Form 27, Block 3) shall be assigned as specified in TO 00-5-3, and will be used to control and track the processing/progress of the PCR

C-9.2 AFTO Form 27, Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval: This form is used to recommend changes, certify completion of TO Verification and

recommend formalization of the TO. In cases where some portion of a TO has not been verified, the AFTO Form 27 shall provide the status of procedures within the PTO.

C-9.3 Verification Records: The CTOCU shall maintain copies of all verification records (minutes of each effort, PCRs generated, TORB/FTORB actions, etc.) through the acquisition phase. At that time, the records will be transferred to the TO Manager.

ANNEX A1

TABLE 1. TO LISTING

(These tables will group the TOs to be verified and specify locations and types of verification, support equipment and assets required, and personnel and facilities required, etc.)

APPENDIX D
POINTS OF CONTACT

ORGANIZATION/ADDRESS	FUNCTION
HQ USAF/ILMM 1030 Air Force Pentagon Washington DC 20330-1030 DSN: 225-5273	Air Force TO policy and procedures, TM Specifications and Standards, Continuous Acquisition and Logistics Support (CALS) policy and procedures, AFPD 21-3
HQ AFMC/ENPS 4375 Chidlaw Rd, Ste 6 WPAFB, OH 45433-5006 DSN: 787-6218	TO System and HQ AFMC TO policy; AFMCI 21-301; single point-of-contact for all TO issues
MSG/ILJ 4375 Chidlaw Rd. Ste. 6 WPAFB, OH 45433-5006 DSN: 787-8218	TO System business practices and procedures; AF TM Specifications and Standards (TMSS) preparing activity (PA); Technical Content Manager (TCM) for 00-5-series TOs, TMCR & TO forms; Legacy Data conversion.
HQ AFMC/DOO 4225 Logistics Ave, Ste 2 Wright-Patterson AFB OH 45433-5740 DSN: 787-8456	Flight Manuals Program (FMP) publications policy and procedures -- AFI 11-215
HQ AFMC/SCDP 4225 Logistics Ave, Ste 6 Wright-Patterson AFB OH 45433-5745 DSN: 787-0654	TO printing and warehousing policies and procedures, distribution procedures, FOIA requests
88CG/SCCIAP 4375 Chidlaw Rd, Ste 6 Wright-Patterson AFB OH 45433-5006 DSN: 787-7811	AFTO and AFMC forms development, AFMC publications manager
HQ AFMC/SE 4170 Hebble Creek Rd, Ste 2 Wright-Patterson AFB OH 45433-5645 DSN: 787-7131	Safety policy and procedures; Make-Safe procedures for public display; Integrated Combat Turnaround (ICT) TOs and Procedures
46OG/OGS 205 W D Ave, Ste 241 Eglin AFB FL 32542-6866 DSN: 872-9551	Aircraft and Munitions flight testing, flight manuals
AFCESA/CEXD 139 Barnes Dr, Ste 1 Tyndall AFB FL 32403-5319 DSN: 523-6120	Disaster Preparedness TOs and procedures
AFCESA/CEXF 139 Barnes Dr., Ste 1 Tyndall AFB FL 32403-5319 DSN: 523-6150	Aircraft Emergency Rescue Information (TO 00-105E-9)
AFSAC/CMAO 1822 Van Patton Dr. Wright-Patterson AFB OH 45433-5337 DSN: 787-1132, x4173	Security Assistance TO Program (SATOP) policy and procedures.

ORGANIZATION/ADDRESS	FUNCTION
AFMETCAL Det 1/MLLW 813 Irving-Wick Dr West, Ste 4M Heath OH 43056-6116 DSN: 366-5174	Calibration TOs and Procedures.
AFSEO/SKD 205 W D Ave, Ste 318 Eglin AFB FL 32542-6865 DSN: 872-9711	SEEK EAGLE Office (Aircraft Flight Certification).
Det 63 AAC/CC 2008 Stumpneck Rd Indian Head MD 20640-5099 DSN: 354-6824	Nonnuclear Explosive Ordnance Disposal (EOD)/Render Safe Procedure (RSP) TOs for all new or modified aircraft, munitions, delivery systems and ordnance items.
OC-ALC/TILU 7851 Arnold St., Ste. 201 Tinker AFB OK 73145-9160 DSN: 336-5468	TO Numbering and Indexing; Security Assistance TO Program (SATOP).
SA-ALC/LF 485 Quentin Roosevelt Rd, Ste 2 Kelly AFB TX 78241-6420 DSN: 945-6366	1-1M-33 & 1-1M-34 Standard Volumes.
SA-ALC/NWI 1651 First St. S.E. Kirtland AFB NM 87117-5617 DSN: 246-4001	Air Force Joint Nuclear Weapons Publication System (JNWPS) TO Manager; TCM for Aircraft-related nuclear weapons TOs
SA-ALC/NWTD 413 N. Luke Dr. Kelly AFB TX 78241-5314 DSN: 945-3610	Nuclear weapons TO management and distribution
SA-ALC/TIFN 512 Shop Ln Kelly AFB TX 78241-6433 DSN: 945-6674	Non-Destructive Inspection (NDI) TOs and procedures
SM-ALC/TIED 5201 Bailey Loop McClellan AFB CA 95652-2514 DSN: 633-3851	Aircraft Battle Damage (Assessment and) Repair (ABDR) TOs and procedures
OO-ALC/LIW 6033 Elm Lane (Bldg 1247) Hill AFB UT 84056-5819 DSN: 458-5432	Air Force Ammunition Control Point (ACP) (all conventional munitions and explosives except tactical missiles, but with Maverick)
WR-ALC/LKG 460 2nd Street, Suite 221 Robins AFB GA 31098-1640 DSN: 468-5302	Air Force Tactical Missile Control Point (TMCP) (all tactical missiles except Maverick)
WR-ALC/CNC 215 Page Rd, Ste 232 Robins AFB GA 31098-1622 DSN: 468-3284	Corrosion Control policies and procedures

ORGANIZATION/ADDRESS	FUNCTION
TO Home Offices (PC & ALC) ↓ ↓	Dissemination of TO System policy and procedures, management of centralized functions (G022, JCALS PDSC, ATOS, etc.)

Office Symb.	Address	Base/State/Zip	DSN
AAC/WMY	102 West D Ave, Ste 300	Eglin AFB FL 32542-6808	872-9435, x2032
ASC/SY	1790 10th St, Rm 102.01	WPAFB OH 45433-7630	785-7885
ESC/XP	5 Eglin St	Hanscom AFB MA 01731-2116	478-2774
OC-ALC/TILUB	7851 Arnold St, Ste 201	Tinker AFB OK 73145-9160	336-5468
OO-ALC/TIEDT	6042 Fir Ave, Bldg 1236	Hill AFB UT 84056-5820	777-8421
SA-ALC/TILD	485 Quentin Rooseveldt Rd, Ste 2	Kelly AFB TX 78241-6425	945-6941
SM-ALC/TICDA	5019 Dudley Blvd	McClellan AFB CA 95652-1026	633-3032
SMC/AXLM	160 Skynet, Ste 1070B	LAAFB CA 90245-4069	833-2166
WR-ALC/TILT	420 2nd St, Ste 100	Robins AFB GA 31098-1640	468-3157

APPENDIX E

GUIDANCE FOR DEVELOPING REQUEST FOR PROPOSAL (RFP) EVALUATION CRITERIA AND INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR QUOTERS

E-1 INTRODUCTION.

E-1.1 Developing the RFP inputs for TOs is normally the responsibility of the TO Manager or other SM functional assigned the task of acquiring the TOs required to support the system or equipment. Roles and responsibilities for TO acquisition are defined in chapters 2 through 4 of this TO.

E-1.2 It is the TO Manager's responsibility, in coordination with members of the TO IPT (chapter 3), to translate program concepts and requirements into contract language that results in delivery of quality TOs to the Air Force. The following discussion provides guidance in the preparation of Evaluation Criteria (RFP Section M) and the Instructions, Conditions, and Notices to Offerors or Quoters (abbreviated "Instructions to Offeror" or "ITO" –RFP Section L), and the use of the Technical Manual Contract Requirements (TMCR) document, TM-86-01 (URL http://www.pdsm.wpafb.af.mil/toprac/to-syste.htm). A Word™ version of the TMCR is on the TO Practices and Procedures WWW Page (paragraph 1-3.2).

E-1.3 The information in this appendix is based on the premise that the reader has a working knowledge of the requirements of TOs 00-5-1, 00-5-2, 00-5-3, and 00-5-15, and the Defense Acquisition Deskbook (DAD).

E-2 REQUEST FOR PROPOSAL.

E-2.1 The TO objective for a program will be included in the Statement of Objectives (SOO), either as a discrete entry when TOs represent a considerable risk to program funding or schedules, or as an element of the organic maintenance or supportability objectives when the risk is low. Risk assessment is performed by the program's Integrated Product Team (IPT) during initial planning. As a minimum, with regard to TO requirements, the RFP will contain a TO Contract Line Item Number (CLIN) to be separately priced, a SOO objective that relates to a TO need (supportability, organic maintenance, etc.), and a TMCR to be tailored by the offeror. A Government Concept of Operations (GCO – DAD, Section 3.7) should accompany the RFP as GFI to the offerors. It will specify the program's data interchange criteria and formats, and should be developed by the program IPT in conjunction with the TO Manager.

E-2.2 In most cases, the TO Manager will do preliminary tailoring of the TMCR placed in the RFP, based on the program's Operational and Maintenance Concepts, and the Government Concept of Operations (GCO) for CALS implementation, by selecting known TO type requirements and providing addressees for deliverables. AF-only tailoring of joint-service performance specifications is provided in the Specification/ Standard Interface Requirements (SIRs) included in the TMCR. The preferred RFP location for the TMCR is attached to a draft CDRL and placed in an exhibit referenced in Section J. Other possible locations are: a) attached to the system or technical requirements document (SRD/TRD), or b) in the proposal technical library.

E-2.3 Evaluation Criteria used to discriminate between offerors are derived from the SOO and the key risk areas. When TOs are considered low-risk, there may be no Evaluation Criteria or supporting ITO inputs on the TO program. In this case, the TO Manager may not be included on the source selection team. This is NOT the preferred business practice!

E-2.3.1 Under these circumstances, the GCO, TO CLIN and contract exhibit (CDRL and TMCR) must stand alone to provide the information and instructions to offerors needed to obtain an acceptable proposal. If an offeror does not fully respond to the contract exhibit, the PCO would write a Deficiency Report (DR) or Clarification Request (CR) and require the offeror to respond prior to source selection and contract award.

E-2.3.2 The TO Manager must develop the CLIN, (see figure E-1) CDRL, and preliminary tailoring of the TMCR to ensure adequate guidance is provided. Sub CLINs should be developed for each level and type of TO required to support the program's Ops and Maintenance Concepts. The CDRL must specify inspection

and acceptance requirements, distribution statements, delivery media, numbers of deliveries, and timing of deliveries. The TMCR should indicate known TO type requirements, preliminary specification tailoring, and delivery addressees.

E-2.4 In every case, the TO Manager should include a copy of all referenced documents in the RFP technical reference library to assist the offeror in understanding Air Force methods and procedures for the acquisition and management of TOs.

E-2.5 The remaining instructions deal with the approach to the evaluation criteria and instructions when TOs are considered key objectives and/or higher risks in a particular acquisition.

E-3 TO PROGRAM REQUIREMENTS.

E-3.1 TO Development. Development of page-based TOs must include tagging text files using Standard Generalized Mark-up Language (SGML) according to the Document Type Definitions (DTDs) associated with selected performance specifications. Non-text files (illustrations, drawings, etc.) must be prepared according to MIL-PRF-28000, MIL-PRF-28002, or MIL-PRF-28003. To accomplish this the contract must contain a fully-tailored TMCR with completed Specification/Standard Interface Requirement (SIR) documents, CDRLs for supporting data deliverables, and a separately-priced CLIN. The Statement of Work (SOW), Integrated Master Plan (IMP) and Integrated Master Schedule (IMS) will contain the contractor's methods of accomplishing the tasks, specific events covered, and schedules. The offeror must obtain approval for the proposed use of non-government or canceled specifications and non-standard DTDs and FOSIs (prior to their development), from MSG/ILJ. This should be one of the entrance criteria for "Develop TOs" in the IMP. Non-page-based (task oriented) TOs, i.e., Electronic TMs (ETMs) and Interactive Electronic TMs (IETMs) must be developed in accordance with MIL-PRF 87268, MIL-PRF-87269 and the 28000-series MIL-PRFs. The reason for requiring use of the MIL-PRFs is to ensure standardization, transportability and compatibility with the JCALS Joint Technical Manual System (JTMS).

E-3.2 TO Quality. TOs must meet the minimum requirements of 100% technical accuracy, a depth and scope of coverage sufficient to support the operations and maintenance concepts, compatibility with the JCALS JTMS, proper markings for classification and distribution limitations, and a Reading Grade Level (RGL) in accordance with MIL-STD-38784.

E-3.3 Data Rights (DFARS) Clause 252.227-7015). Source data and TOs prepared specifically for the contract, and derivative works developed from them would normally be provided with Unlimited data rights. (Derivative works are publications such as checklists and workcards developed from one or more basic manuals.) The data and manuals may be copyrighted, or contain proprietary data or procedures. In these cases, data and manuals may be supplied with Limited Rights or Government Purpose License Rights (GPLR) only. Commercial manuals are procured with Unlimited Rights, GPLR, or Limited Rights. The TO Manager must verify that the appropriate FAR/DFARS clauses have been identified in RFP Section H.

E-3.4 Classification, Distribution, Destruction, Disclosure, and Export Control Notices. Almost all TOs fall into some category of distribution restriction. Data may be classified and controlled according to DoD 5200.1-R/AFI 31-401. Non-classified technical data considered technologically sensitive is subject to distribution limitations and export control requirements. The exact wording of distribution statements and restrictive notices is contained in DODD 5230.24 and MIL-STD-38784. The TO CDRL will provide appropriate direction for applying distribution limitation markings to TOs. In most cases, specific notices are determined on a case-by-case basis by the TO IPT as TOs are developed, depending on TO content.

E-3.5 TO Delivery. Delivery formats, methods, destinations, and user needs (see below) are critical elements of initial program support and life-cycle support costs. In all cases, deliveries must be in a digital format. The particular format used will depend on the TO sustainment concept, JTMS requirements, and user needs, and will be specified in the GCO and TMCR.

E-3.5.1 Delivery Formats.

E-3.5.1.1 Organically-Maintained, Page-Oriented TOs, Prior to JCALS Implementation. Contractors should deliver an Indexed Adobe™ Portable Document Format (IPDF) file of the SGML-authored TO to the government.

E-3.5.1.2 Organically-Maintained, Page-Oriented TOs, After JCALS Implementation. Contractors should deliver JCALS-compliant SGML-formatted TOs accompanied by the appropriate and approved Air Force

DTDs to the government. TO deliveries should include SGML tagged instances of the TOs; including Initial Graphics Exchange Specification (IGES), Computer Graphics Metafile (CGM), or raster graphics files.

E-3.5.1.3 Contractor-Maintained, Page-Oriented TOs. If the prime contractor will maintain system TOs for the life of the system, the TO files should be accessible through a contractual agreement for Contractor Integrated Technical Information Services (CITIS – MIL-STD-974) for view and distribution in IPDF format. Source data files for updating other TOs, manuals, and data files must be delivered (or accessible) as SGML-tagged instances.

E-3.5.1.4 Task-Oriented TOs. Electronic TOs and IETMs are accessed by or delivered to the government in their native formats and are distributed electronically for use on a system-specific electronic display system (EDS).

E-3.5.2 Delivery Method. The preferred method of delivery (DOD 5000.2-R) is by direct government access to the TO files in the contractor's database, through a contractual agreement for CITIS. CITIS access applies to all data, not just TOs. Physical delivery of digital media, when required, may include any medium allowed by MIL-STD-1840 and specified in the TMCR. The program's digital delivery concept will be documented in the GCO.

E-3.5.3 Delivery Destinations. TOs and preliminary TOs are delivered according to the requirements on the TO CDRL and detailed in the TMCR delivery matrices. These should be tailored before the RFP is finalized. The CDRL must also specify the TO inspection and acceptance agency.

E-3.5.4 User Requirements. Paper copies of TOs will be required for the foreseeable future, and will continue to be printed and distributed according to TO 00-5-2. However, if users have a validated requirement to view specific TOs on an EDS, they must also be available in digital format. The format for digital delivery will either be an IPDF file indexed according to the Air Force Digital Data Strategy, or in the native format specified for the program or system. Indexing permits the user to move quickly between TO chapters, sections, figures and tables, or move to specified words or character strings. Digital Data Strategy (http://www.pdsm.wpafb.af.mil) indexing instructions should be included or referenced in the tailoring of MIL-STD-1840.

E-3.6 Schedule. Air Force policy requires delivery of verified TOs prior to or concurrently with delivery of operational equipment to the field. This requirement drives TO development and delivery schedules throughout the acquisition phase of a program. These schedules will typically be submitted as part of the offeror's proposed IMS, and are updated throughout the period of performance.

E-3.7 Time Compliance Technical Orders (TCTOs). TCTOs are often used to implement contractor Engineering Change Proposals (ECPs) for permanent modifications to configured items. ECPs are reviewed and approved by the program Configuration Control Board (CCB). When the CCB decides that a TCTO is the appropriate method of implementation, the contractor may be requested to develop the TCTO package for Air Force coordination and approval. See TO 00-5-15 for a detailed description of the TCTO system.

E-4 EVALUATION CRITERIA. Section M of the RFP includes evaluation criteria listed in relative order of importance. Evaluation criteria for TO requirements may address any or all of the following areas, as required by the program: Selection, Preparation, Quality, Verification Support, Delivery, Sustainment and TCTO Development. Some of these areas may be combined in the evaluation criteria, and/or additional requirements may be identified by the TO IPT's program analysis. The following paragraphs illustrate evaluation criteria for the listed areas, with sample wording:

E-4.1 TO Selection. TO types are selected by tailoring the TMCR to reflect program needs based on operating and maintenance concepts. Tailoring includes determining TO types; content formats based on MIL-PRF or commercial specifications; delivery formats, schedules and destinations; and deleting non-applicable requirements from and selecting specific options offered in cited specifications, through the use of SIRs. Sub-areas, which may be covered in the ITO, include development and use of source data for TOs, use of commercial (COTS) manuals, and identification of additional TO requirements after contract award.

SAMPLE: "The offeror's proposed approach to TO development will be evaluated for an understanding of program TO requirements. The offeror's planning for the overall TO program, including the tailoring of the TMCR and selection and application of required specifications (either military performance [MIL-PRF] or commercial), with associated Document Type Definitions (DTDs) and Formatted Output Specification

Instances (FOSIs) will be evaluated. Data requirements recommended for support of the TO development program will also be evaluated."

E-4.2 TO Preparation. Preparation includes the method of TO content development; use of approved DTDs for SGML TO text file generation; use of MIL-PRF-2800x-series specifications for graphics development and presentation; determination of data classification and distribution limitations; and procedures for requesting TO numbers. The initial TO Guidance Conference (whether held as a stand-alone function or as part of a program Technical Interchange Meeting (TIM)) is covered under this topic, as it is essential in resolving any possible problems with contract requirements interpretation.

SAMPLE: "The offeror's proposed approach for TO development will be evaluated for an understanding of TO interface requirements with JCALS. The development process, including planned use of approved MIL-PRF or commercial specifications, DTDs and FOSIs; method of reviewing and using source data; method of requesting TO numbers; and processes for determining and marking data classification and distribution limitations will be evaluated."

E-4.3 TO Quality Assurance. The offeror is responsible for delivery of adequate, accurate and safe TOs which conform to government requirements. The content must be fully compatible in depth and scope with the established maintenance concept and the approved logistic support plan. Content must be checked for security classification, distribution restrictions, and RGL. The quality process includes TO technical reviews, the offeror's internal process controls, and checking TO procedures for validity and usability.

SAMPLE: "The offeror's quality processes will be evaluated to ensure preparation and production of a total quality product. Checks and balances must be adequate to detect and correct any process errors, and ensure proposed TO procedures are valid and usable. The evaluation will also include the flow-down of quality requirements to subcontractor and vendors."

E-4.4 Verification Support. Most programs and projects which require acquisition or modification of TOs will also require contractor support of the government's verification effort. This support may consist of any or all of the following: Engineers and/or writers to correct any TO errors detected; program-peculiar equipment, parts and supplies; participation in TO Review Boards; and travel as required to verification sites. For a combined contractor/government certification of TO procedures (formerly called "val/ver"), the offeror's proposal must address questions of liability, test sites, and division of labor.

SAMPLE: "The offeror's proposed support for the government's TO verification program will be evaluated for proper utilization of personnel, supplies, support equipment, production-configured system or commodity assets, and spare parts. Proposed allocation of liability during combined contractor/government certification efforts will be evaluated. Procedures for incorporating updates developed during verification will be assessed."

E-4.5 TO Delivery. Several areas, including digital formats, methods (on-line vs physical media), and schedules, must be assessed in the offeror's proposal for delivery of TOs. Digital formats depend on the circumstances and the users' needs (paragraph E-3.5). Direct electronic access to TO files via CITIS is preferred over physical delivery of data. The IMP and IMS must support program requirements for delivery of verified TOs (paragraph E-3.6).

SAMPLE: "The offeror's proposed format for digital delivery of TOs and method of delivery shall be evaluated for compatibility with existing government Automated Information Systems (AIS). Refer to the Government Concept of Operations (GCO) (insert location) for guidance. The proposed level of government data rights will be evaluated to ensure compliance with Federal Acquisition Regulation/Defense Federal Acquisition Regulation Supplement (FAR/DFARS) clauses. The IMP event and IMS schedule for TO delivery will be evaluated for support of program objectives."

E-4.6 TO Sustainment. In most cases, the offeror will be required to maintain program source data and TOs for some time after they are developed and formalized. This is particularly true under acquisition reform guidelines calling for maximum "privatization" of military functions.

SAMPLE: "The offeror's proposed processes for preparing and delivering updates to maintain the currency of TOs and TO source data will be evaluated for adequacy and timeliness."

E-4.7 TCTO Development. Contractors may be requested to develop TCTO packages for Air Force coordination and approval, especially while the contractor has engineering responsibility for the program.

TCTO development and coordination procedures are covered in AFMCMAN 21-1. MIL-PRF-38804 specifies TCTO content requirements.

SAMPLE: "The offeror's proposed approach to the development and delivery of Time Compliance Technical Orders (TCTOs) and related TO updates required as a result of engineering change proposals (ECPs) will be evaluated to ensure their understanding of TCTO requirements."

E-5 INSTRUCTIONS TO OFFERORS. The ITO informs offerors of what to include in their proposal to ensure each evaluation criterion is addressed. Additional guidance is obtained from the GCO and other GFI in the RFP Technical Library. The ITO must clearly instruct offerors in the preparation/structure of their proposal and emphasize special government concerns. The ITO and Evaluation Criteria do not necessarily have a one-to-one correspondence; a criterion may be supported by several ITO statements and vice versa. ITO requirements will instruct offerors to complete tailoring of the TMCR and required CDRLs, and develop pertinent SOW paragraphs (for processes), IMP entries with entry and exit criteria (for events), and IMS entries (for schedules). In some cases, an ITO statement could affect all proposal areas. Several possible sample ITO statements are presented below, divided into the same areas as the previous Evaluation Criteria section. They must be tailored for each program, and may be combined or even eliminated depending on program needs.

(TO Selection Criterion)

E-5.1 TMCR Tailoring. Sufficient explanation must be included in the ITO to ensure that offerors understand where to find the TMCR in the RFP, what additional tailoring is allowed or expected, and how to include it in their proposal.

E-5.1.1 TO Type Requirements. The ITO should require offerors to identify specific TO types and corresponding AF-approved performance specifications from the TM Type Delivery Tables in TMCR Section 1. If an Air Force DTD does not exist (normally attached to the MIL-PRF specifications) or when the contractor proposes to use a commercial or military specification not listed in the TMCR, the ITO must require coordination and approval, through the TO Manager, from MSG/ILMP prior to initiation of any DTD development. This will prevent duplication of effort and ensure JCALS compatibility. TMCR Section 1 also contains delivery matrixes which must be partially tailored by the government prior to issue of the RFP to provide delivery addressees. The contractor must complete tailoring to specify delivery parameters.

E-5.1.2 Specification/Standard Interface Requirements (SIR) Tailoring. SIRs document the program-selected options and deletion of excess requirements in specifications and criteria. Section 2 of the TMCR contains pre-tailored SIRs which document the Air Force options for applicable tri-service TMSS. The ITO must require the offeror to complete tailoring of the included SIRs and prepare a SIR for each additional direct-cite specification or standard proposed, government or commercial. All standardization documents must be tailored to impose only the minimum requirements for the TO program.

E-5.1.3 Specification Interpretation Documents (SIDs). SIDs are submitted by offerors and contractors to request clarification (interpretation) of the applicable "shall-statements" in performance specifications and criteria, if necessary. The ITO may inform the offeror of the right to request clarification of any invoked contract requirements.

SAMPLE: "The offeror shall identify proposed TO types in the Technical Manual Contract Requirements (TMCR) document, TM-86-01, provided in (state where in the RFP the TM 86-01 is located). The TMCR TM Type Delivery Tables and Delivery Matrices in Section 1 will be tailored as required. In Section 2, the offeror shall provide Specification/Standard Interface Records (SIRs) for each specification or standard cited in Section 1 to indicate any required application tailoring. Questions on specification or standard requirements may be submitted via Specification Interpretation Documents (SIDs) through the PCO to the TO Manager. See TO 00-5-3 (location) for TO selection and tailoring guidance."

E-5.2 Commercial Manuals. The ITO should cite the government preference for use of existing commercial manuals when they are adequate for program support. The contractor should recommend them using CFAE/CFE Notices (see below) or letters. The ITO should reference MIL-HDBK-1221 as the guide for review and acceptance of commercial O&M manuals, and reference MIL-PRF-7700 as an additional guide used for review of Flight Manual contents.

SAMPLE: "The offeror shall describe (in the TMCR and/or SOW) proposed use of commercial manuals, to the maximum extent practical, when they are determined adequate for program support. MIL-HDBK-1221

(for all manuals) and MIL-PRF-7700 (for flight manuals) may be used as guidance to determine suitability of the manuals."

E-5.3 Contractor Furnished Aeronautical Equipment/Contractor Furnished Equipment (CFAE/CFE) Notices. Depending on the scope of the acquisition and development program, contractors may determine that there are TO and commercial manual requirements in addition to those initially proposed. The TO Manager should ensure the RFP includes a CDRL invoking the DID for CFAE/CFE Notices (DI-TMSS-80067). The alternative is to have the ITO direct offerors to propose their methods for government notification of possible new TO requirements.

SAMPLE: "The offeror shall describe (in the SOW or draft CDRL) proposed methods for notifying the government and recommending use of additional technical manuals, including commercial manuals, determined necessary for program support after contract award. The suggested method is by submittal of Contractor Furnished Aeronautical Equipment/Contractor Furnished Equipment (CFAE/CFE) Notices (DI-TMSS-80067)."

E-5.4. Source Data. The ITO should require the offeror to describe how source data will be acquired or developed, used and distributed. Source data is used to develop program TOs, Interim TOs, commercial manual supplements, TCTOs, and updates to other TOs affected by the program. Source data for EOD and Aircraft Emergency Rescue TMs are formatted and delivered according to specific DIDs.

SAMPLE: "The offeror shall fully describe (in the TMCR, SOW and IMP) proposed processes for the preparation, use and delivery of source data for the development and update of program TOs and other TOs affected by the program. (If applicable, add:) This must include the development and delivery of EOD and Aircraft Emergency Rescue TO source data (in draft CDRLs)."

(TO Preparation Criterion)

E-5.5 Guidance Conference. The offeror should host an initial TO Guidance Conference or program TIM to introduce members of the program's TO IPT and ensure mutual understanding of all contract requirements.

SAMPLE: "The offeror shall propose (in the IMP) an initial TO Guidance Conference or Technical Interchange Meeting (TIM) within 60 days of contract award to discuss management and administration of the TO program and ensure complete understanding of contract requirements."

E-5.6 TO Development. The ITO should require the offeror to describe the processes to be used during TO development. These process descriptions should cover use of approved specifications and DTDs, preparation methods for TO text and graphics, etc.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for developing digital TO text and graphics in a format compatible with the government TO management system (JCALS), including processes for obtaining approval of rescinded or non-AF specifications and DTDs, when applicable."

E-5.7 TO Classification and Distribution Controls. The ITO should direct offerors to determine and apply proper classification and distribution limitation markings to TOs and other technical data.

NOTE

TOs are classified in accordance with the security classification guide (SCG) provided by the government. On small programs that do not have a SCG, the DD Form 254, DoD Contract Security Classification Specification, provides this information. Distribution limitations are determined according to DODD 5230.24 and MIL-STD-38784, and are specified by the government based on TO content.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for determining and marking classification of and distribution, destruction, disclosure, and export control notice requirements for technical information developed and used in TOs."

E-5.8 TO Numbering. The ITO should inform offerors of the procedures used to request TO numbers. The procedures should be reflected in the SOW.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for requesting TO number assignment for proposed TOs (letter request and/or submittal of CFAE/CFE Notices)."

(TO Quality Assurance Criterion)

E-5.9 Quality Process. The ITO may require offerors to describe their quality processes (including product reviews and contractor testing) when there is no "past performance" history for the offeror, or when the TO program is considered very high risk. TO quality should always be included as an exit criterion for "Develop TOs" in the IMP.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for ensuring production of quality products. Processes described should include: a) parsing of Standard Generalized Mark-up Language (SGML) tagged files; b) determining and marking security classification and distribution limitations (see DoD 5200.1-R/AFI 31-401 and DODD 5230.24); and c) procedures to allow for government insight into the technical writing effort status/progress. Completion of this process should be an exit/entrance criterion for appropriate events in the IMP."

E-5.10 Conferences and reviews. The ITO should ask the offeror to establish and define criteria in the IMP for conducting technical reviews of TOs during and after development (In-Process Reviews (IPRs) and Prepublication Reviews). Sufficient reviews should be proposed to ensure correct implementation of government requirements by the contractor and any subcontractors or vendors. The criteria should include both entry and exit conditions.

SAMPLE: "The offeror shall describe (in the IMP and IMS) proposed periodic technical reviews (In-Process Reviews (IPRs), Prepublication Reviews (PPR), etc.) to ensure TOs are being developed according to specification and associated DTD requirements, and contain data and procedures in sufficient depth and scope to support the Ops and Maintenance Concepts. **NOTE:** PPRs shall be proposed for critical safety and nuclear surety procedures TOs, and may also be required for other complex procedures TOs."

E-5.11 TO Procedures Certification. The ITO should suggest that offerors plan and propose actual "hands-on" performance of all operation and maintenance procedures to ensure they are accurate, adequate and usable by the target audience.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for certification of the accuracy, adequacy and usability of TO operation and maintenance procedures. Processes used for government notification shall also be described in the IMP. These processes should include actual performance of most procedures, with simulation reserved for those procedures which would activate explosive devices or present a hazard to personnel or equipment. Non-procedural data in TOs should be assessed by desk-top analysis as part of the quality process. **NOTE:** The government arranges for all performance testing of Explosive Ordnance Disposal (EOD) Data and Joint Nuclear Weapons Publication System (JNWPS) TOs.

(Verification Support Criterion)

E-5.12 Verification Support. The ITO should require offerors to describe their proposed support of government verification, including provisioning of equipment and supplies, contractor personnel, and TO configuration and update. Contractor membership on the TO Review Board (TORB) and/or Flight TORB is essential.

SAMPLE: The offeror shall describe (in the SOW and IMP) proposed support of government TO verification, to include writers and/or engineers to resolve problems during verification, provision of program peculiar equipment and supplies, maintenance of TO configuration, incorporation of government comments, and participation in TO Review Boards (TORBs) and Flight TORBs."

(TO Delivery Criterion)

E-5.13 Delivery. Contract TO-related deliveries can include source data, management data, and preliminary and finalized TO files. Delivery requirements are specified in the GCO (provided as GFI in the RFP), and TO contract exhibit (CDRL and TMCR). The TO Manager must determine the offeror's ability (i.e., the risk) to deliver digital files and in what format. The ITO should require the offeror to include delivery entry and exit criteria (including parsing of SGML-tagged files in addition to other quality assurance measures) in the IMP, and include delivery schedules in the IMS.

SAMPLE: "The offeror shall describe (in the SOW and/or IMP) proposed formats for delivery of digital TO data. The proposal must include the media for physical delivery (according to MIL-STD-1840) or means by which the Government will access the technical data files through a Contractor Integrated Technical Information Service (CITIS) agreement (MIL-STD-974). For guidance, refer to the Government Concept of Operations (location in RFP). Delivery entry and exit criteria (including file parsing) will be included in

"the IMP, and delivery schedules will be included in the IMS. NOTE: The Internet address for obtaining the SGMLS Parser (public domain) software is: ftp.ifi.uio.no:/pub/SGML."

E-5.14 Data Rights. As a general rule, the government should receive unlimited rights in any data developed with government money. Exceptions for proprietary and copyrighted data may result in receiving only "Government Purpose License Rights" (GPLR – FAR/DFARS). Some commercial manuals may be totally restricted from reproduction or redistribution. The ITO should request offerors to specify data rights levels for new data, and direct them to the location of the FAR/DFARS clauses.

SAMPLE: "The offeror shall clearly describe (on the TO contract exhibit CDRL) the proposed level of government data rights according to the FAR/DFARS, for all data developed specifically for the government. FAR/DFARS clauses are located in Section (insert the location FAR/DFARS clauses as appropriate) of this RFP."

E-5.15 TO Reproduction Management. In some cases, a program may request the contractor to manage the reproduction and distribution of TOs for the program. This requirement must be indicated in the ITO, or on the TO contract exhibit CDRL. Reproduction includes printing of paper copies and/or reproduction of the digital file on magnetic/optical media. For TO printing, the contractor must assemble a print package consisting of the reproduction media, a Reproduction Assembly Sheet (AFTO Form 30), and a deck of TO Initial Distribution labels provided by the TO Manager. The completed package is submitted to a printer as directed by the local Defense Automated Printing Service (DAPS) office. After use, reproduction media (except for direct image copy, if used) is normally returned to the contractor for storage and updating. The event criteria should be described in the IMP and the milestones included in the IMS.

SAMPLE: "The offeror shall describe (in the SOW and IMP) proposed processes for preparation and management of reproduction packages, release of reproduction masters for publication, and initial distribution of TOs and updates. Applicable proposed milestones shall be included in the IMS."

(TO Sustainment Criterion)

E-5.16 TO and Source Data Maintenance. During the contract period of performance, the contractor must update preliminary and formal TOs and source data to incorporate corrections, equipment configuration changes, and maintenance and operational concept changes. The ITO should ask the offeror to describe how program TOs covered by the contract will be maintained. Maintenance should include preparation of changes, revisions and supplements to program TOs, and updates prepared for TOs affected by, but not developed as a part of, the contract (see TO 00-5-1).

SAMPLE: "The offeror shall describe (in the SOW and/or IMP) proposed processes for maintaining currency and accuracy of source data and TOs developed and delivered under this contract, including preparation of updates for TOs affected by, but not developed as part of the contract. A proposed schedule of updates will be included in the IMS."

(TCTO Development Criterion)

E-5.17 Time Compliance Technical Orders (TCTOs). TCTOs are separately priced on an "as-required" basis. The ITO should request the offerors to detail their procedures and the entrance and exit criteria for the events involved in preparing and delivering TCTOs, without a price proposal for the effort. Proposals for individual TCTOs will include schedules and costs. TCTO preparation includes the TCTO itself and updates to any affected TOs. Schedules depend on TCTO urgency, need for kits, and method of accomplishment. Deliveries will be in a digital format as specified for other program TOs.

SAMPLE: "The offeror shall describe (in the SOW and IMP) proposed processes for development of Time Compliance Technical Orders (TCTOs) and updates to affected TOs resulting from ECPs. Proposed processes shall cover every facet of development, review, coordination approval, delivery, publishing and distribution. This procedure will not be priced or scheduled until invoked by a contract change based on approval of an ECP."

Contract_____ Exhibit_____

Exhibit date_____ CLIN_____

ORGANIZATIONAL TECHNICAL ORDERS

Program_____

ELIN/ SELIN	SUPPLIES/SERVICES	CLASS	QUANT/ UI	DELIVERY DATE	PRICE/ SET
X001	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000
X002	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000
Y001	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000
Z001	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000

* Enter either the Table and item number(s) or the TO number/type. For other CDRL items included in the exhibit (TO-related plans, schedules, etc), use the CDRL number or item title.

Enter the Specification number listed in the Table specifying TO types to be provided, or for other CDRL items, the DID controlling format and content.

Figure E-1. Example of Contract Line Item Numbers (CLINs) for TO Exhibit.

APPENDIX F - DELETED.